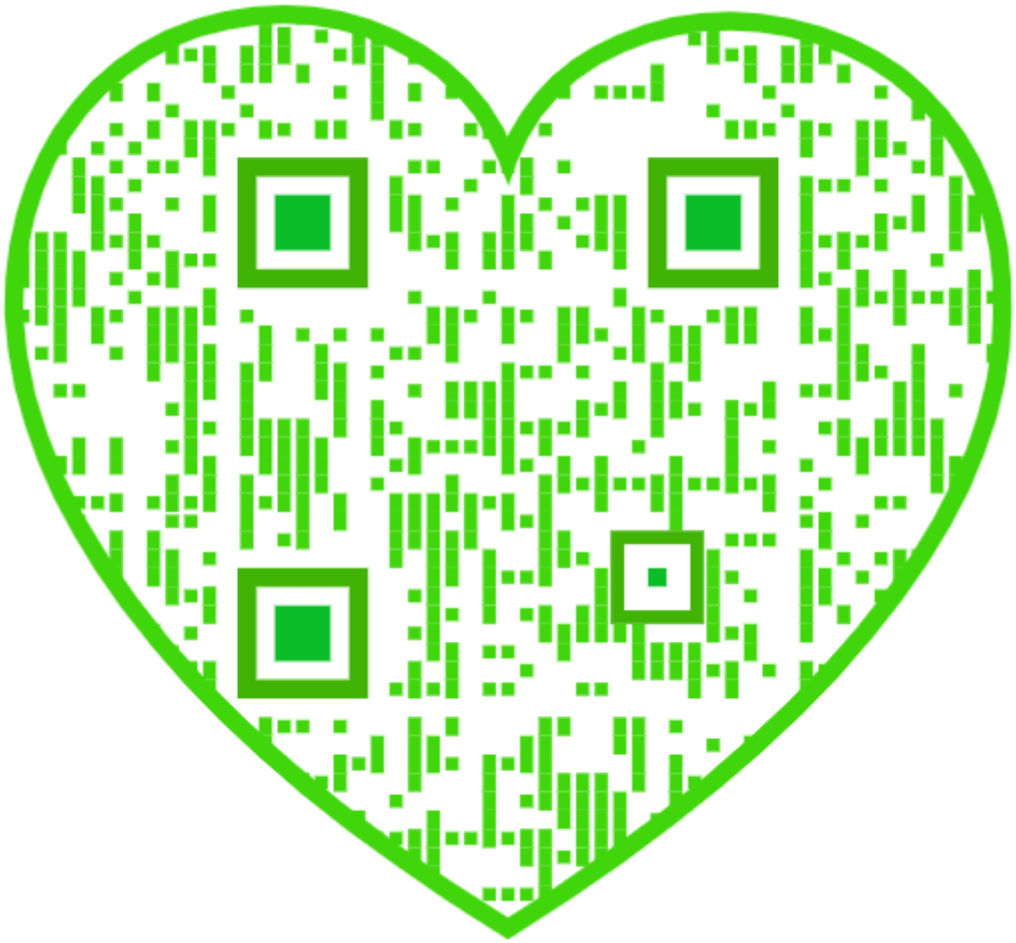
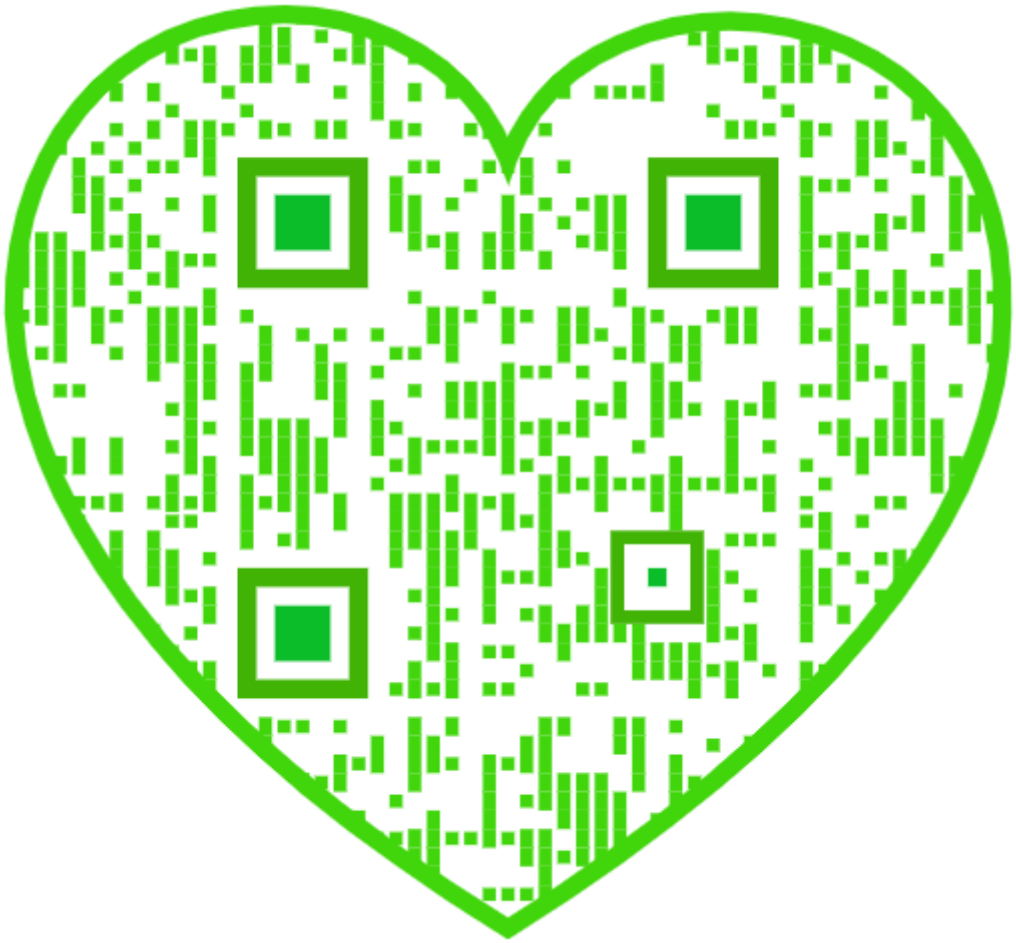
THE XX^TH CENTURY BOOK ON THE HORSE

SYDNEY GALVAYNE

SECOND EDITION





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THE XXTH CENTURY BOOK ON THE HORSE

By

SYDNEY GALVAYNE

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(19 Original Illustrations)

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FRED. GALVAYNE (Manager, Société du Polo, Paris)

SECOND *EDITION*

LONDON

BAILLIÈRE, TINDALL AND COX

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TO
MAJOR-GENERAL VISCOUNT DOWNE,
K.C.V.O., C.B., C.I.E.

PREFACE TO THE SECOND EDITION

LITTLE did I think when I published the First Edition of this work that in so short a space of time (a few months only) I should be writing a Preface to the Second Edition.

I have gone most thoroughly through the First Edition, and have made such alterations and additions as appear to be necessary, which I hope will enhance its value.

I take this opportunity of thanking the Press for their kindly interest in my work. It has been extremely gratifying to me that they have been so unanimous in their expression of approval, recognizing in it a book of "great originality and practical worth," the result of a lifetime of personal experience with horses in various parts of the world, under most varied circumstances on sea as well as on land.

The success attained by my most serious attempt at authorship induces me to write a companion volume, to be called *Practical Horsemanship : Training, Driving, Riding, Saddle and Side Saddle,* which is dedicated by permission to His Grace the Duke of Portland, K.G., G.C.V.O., P.C. I trust this work will be equally well received by the public and also by the Press.

SYDNEY GALVAYNE.

December, 1906.

PREFACE TO FIRST EDITION

IN presenting to the interested public of Great Britain THE TWENTIETH CENTURY BOOK ON THE HORSE—my latest, most comprehensive and complete work on the subject—I trust the reader will pardon me for indulging in a few preliminary observations of a purely personal nature, inspired by a reference I have just made to the date of publication of the first edition of my work entitled *The Horse, its Training and Management*, which was dedicated by permission to His Grace the late Duke of Westminster. I observe that this book is dated 1888, sixteen years ago, and four years after my arrival in this country from Australia. It was with considerable diffidence—a commodity of which the typical Colonial is not usually considered to possess a superabundant supply—that I then ventured to publicly claim ability to teach the horsemen of Great Britain, who have enjoyed from time immemorial a deservedly high reputation for skill and proficiency in equine matters, anything new and valuable respecting the management and treatment of the horse. I naturally felt very dubious as to the nature of the reception which would be accorded a stranger who claimed to practically revolutionize an important section of the theory and practice of a science in a country in which its pursuit has been followed for centuries with keenness and enthusiasm. But my fears were entirely groundless. I was received with more appreciation, kindly feeling and genuine hospitality by all classes of English society than, in my wildest dreams of anticipation, I hoped or expected to receive. I feel sure that in no country in the world but England would such generous toleration have been shown, and such a reception have been accorded, under the circumstances.

The feeling of satisfaction with which I am filled when I indulge in a retrospective view of my early experiences in Great Britain is considerably damped when I realize how many of those who were most conspicuous by their kindness and hospitality towards me have now "crossed that bourne whence no traveller returns."

Preface to First Edition

For the benefit of those of my readers who belong to the present generation, and who may not therefore be acquainted with the nature and scope of my work in the "eighties" I may state that my object was the introduction of an entirely new method of *breaking* horses based upon what I designated the "humane and scientific" system, as opposed to the ordinary and sometimes violent and abortive methods hitherto in vogue; and, secondarily, at the diffusion and advocacy of new ideas relative to the general management and treatment of the horse. Had I contented myself with theoretical expositions of the new methods I advocated, there is no doubt that the result of my efforts would have been far different and much less satisfactory—and rightly so. But I did not confine myself to theorizing. As is well known to those who are old enough to recollect my first visit to this country, I practically *demonstrated*, on hundreds of occasions in public, and in every town and city of importance in Great Britain, that, beyond all possibility of doubt, my system was not only more in accordance with modern ideas of humane treatment of the lower animals, but also infinitely more efficacious in its actual results than the systems practised up to that time. I gave hundreds of lectures and public exhibitions in every part of the country, and conducted classes in every great centre of the population—classes which comprised in the aggregate many thousand members—for the purpose of expounding, popularizing, and demonstrating the efficiency of my new methods and ideas. My success was striking, immediate and indisputable. In face of the palpable proofs I afforded of my ability to subdue and break any horse submitted to me, however vicious, brutal and apparently intractable it might be, in a minimum of time and without resorting to methods involving violence and exhaustion, it was impossible for the most prejudiced to retain their prejudices and deny the soundness, efficacy and superiority of my system. The hundreds of testimonials I received from some of the most eminent personages in the land afforded gratifying proofs that my efforts were appreciated by those competent to judge, and a perusal of them will enable the reader to form an idea of the measure of the success I achieved. Among the distinguished noblemen and gentlemen who attended my lectures and demonstrations, and publicly expressed their complete and hearty approval of my system, were the late Duke of Westminster, the late Duke of Northumberland, the late Duke of Teck, the late Duke of Manchester, the late Duke of Sutherland, the late Lord Combermere, the late Marquis Talon, the present Duke of Northum-

berland, the Duke of Wellington, Lord Middleton, Colonel Anstruther-Thomson, M.F.H., Major-General Viscount Downe, Sir Thomas Barrett Lennard, the late Principal Williams, F.R.C.V.S., Edinburgh, and very many other eminent men whose approbation and endorsement it was very gratifying and encouraging to secure.

Among the hundreds of *professional* attendants at my classes and exhibitions may be mentioned the following :—the late Dr. Geo. Fleming, C.B., F.R.C.V.S.; Prof. J. W. Axe, Lecturer, R.C.V.S., London ; Prof. T. Walley, M.R.C.V.S. ; Prof. M'Call, Prin. Vet. College, Glasgow ; the late Capt. B. Russell, F.R.C.V.S. ; G. T. Pickering, F.R.C.V.S. ; Vet. Capt. M. Horace Hayes, late of the A.V.D.; Professor Dewar, Royal (Dicks) College.

I may also be allowed to mention that in September 1887 (Jubilee Year) I had the very distinguished honour of appearing at Balmoral Castle by command of Her Late Majesty Queen Victoria, and of giving exhibitions of my " humane " system before Her Majesty, the Princess Beatrice, and other members of the Royal Family.

One of the most valuable portions of the work, although occupying a relatively small amount of space, is that on " Horse Dentition." It contains an exposition of an entirely original system for ascertaining the age of a horse or mare at any period of its life, by an inspection of the animal's teeth. In view of the fact that until I elaborated and published this system it was regarded as practically impossible to correctly estimate even the approximate age of a horse over seven years old (from the appearance of its teeth), it will be readily admitted by all who are interested in equine matters that any method which *infallibly indicates the exact age of any horse from foalhood up to the age of thirty years or more,* and which is so easy of mastery that the merest tyro can acquire a practical knowledge of it in the course of a few lessons, is one of considerable importance and real utility. For proof that my system actually accomplishes this I refer the reader to the facts embodied in the treatise itself, and also to the indisputable fact that, out of the many hundreds of exhibitions of age-reading I gave publicly in this country, *there is not on record one single instance of failure or mistake on my part.*

I would like here to remind the reader that for two years, during the late Boer War, I held the position of Director of Breaking to the Imperial Army in South Africa ; that, in the discharge of my duties in that capacity, I had to deal with horses from almost every country on the face of the globe,

some of them afflicted with practically every conceivable vice ; and that out of the thousands that were treated by me, on the lines indicated in this book, *only sixteen* were ultimately rejected by me as being unfit through vice for active military service. To those who know anything whatever about horses this fact will be eloquent and conclusive testimony to the soundness and practical value of my system.

I may, in conclusion, make special reference to the treatise on Polo, and the selection and training of the Polo Pony, by my son, Mr. Fred Galvayne. He assisted me during the whole of my tour in Great Britain, at the termination of which he went to India with horses for H.H. the Nizam of Hyderabad. On his return to this country he associated himself with an extensive establishment for the supply of Polo Ponies and Hunters, ultimately devoting himself entirely to Polo Pony training and to the practice of the game itself. He was subsequently offered, and accepted, the management of the Société du Polo, Paris, which position he still occupies. It was entirely at my suggestion and earnest request that he consented to embody his ideas relating to that game in literary form for submission to the public. Personally I feel that he was quite justified in taking such a step, as the information he gives is essentially practical, and is not to be found in any other single work on the subject. I hope and believe that the treatise will prove of interest and real utility to all who practise the fine and deservedly popular game of Polo.

SYDNEY GALVAYNE.

February, 1905.

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EXPLANATIONS OF VARIOUS TERMS AND DESCRIPTIONS OF SPECIAL APPLIANCES USED BY THE AUTHOR

Galvayning	Tying the head to the tail.
Galvayne Strap	The strap used for the above.
Third-hand	A smooth, round hickory or ash pole, 10 feet long, $1\frac{1}{2}$ inch in diameter, with rounded ends.
Tail-cord	A piece of strong cord, about 3 feet long, with a small loop at one end.
Leading Rope	A piece of rather thick, pliable rope, about 17 feet long, with a small loop at one end.
Hair Rope	A specially made rope, of the same length as the above, with horse-hair interwoven in it.
Crush	An enclosed space into which wild horses are driven to be caught (see Plate 53).
Galvayne Head-collar	A special collar, designed and used by the author.
Leg Strap	A strap for tying up the horse's leg.
Single Skeleton Brake	See Plate No. 4.
Long-shafted Exercise Brake	See Plate No. 5.
Swinging Rope	A piece of strong rope, about 6 feet long, with a loop at one end.
Galvayne Surcingle	A special surcingle invented by the author, and forming an essential feature of his system of training and breaking.

APPLIANCES

THE Breaking Appliances necessary for the practice of the "Galvayne" system of treating horses, being patented, can only be obtained from Messrs. W. Clark & Son, Leeds, who have the sole and only right of making.

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No.		£	s.	d.
1.	Brass-mounted surcingle and crupper	1	8	0
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7.	Long breaking reins	0	18	6
8.	Leg strap (for throwing)	0	2	0
9.	Bridle, with winkers	0	17	6
10.	Bridle, without winkers	0	6	6
11.	Breeching, with loin strap and shaft straps	0	18	6
12.	Single leather traces, "lined ends"	0	10	6
13.	Double leather traces	0	15	0
14.	Breast collar and neck straps	0	18	6
15.	Brass-mounted head collar and "Galvayne" strap	0	13	6
16.	Patent hackney bridle for runaway horse, super-steel bit	1	15	0
17.	Mouthing bit, with keys	0	5	6
18.	Mouthing bit, without keys	0	5	0
19.	Super-steel four-ring snaffle	0	6	6

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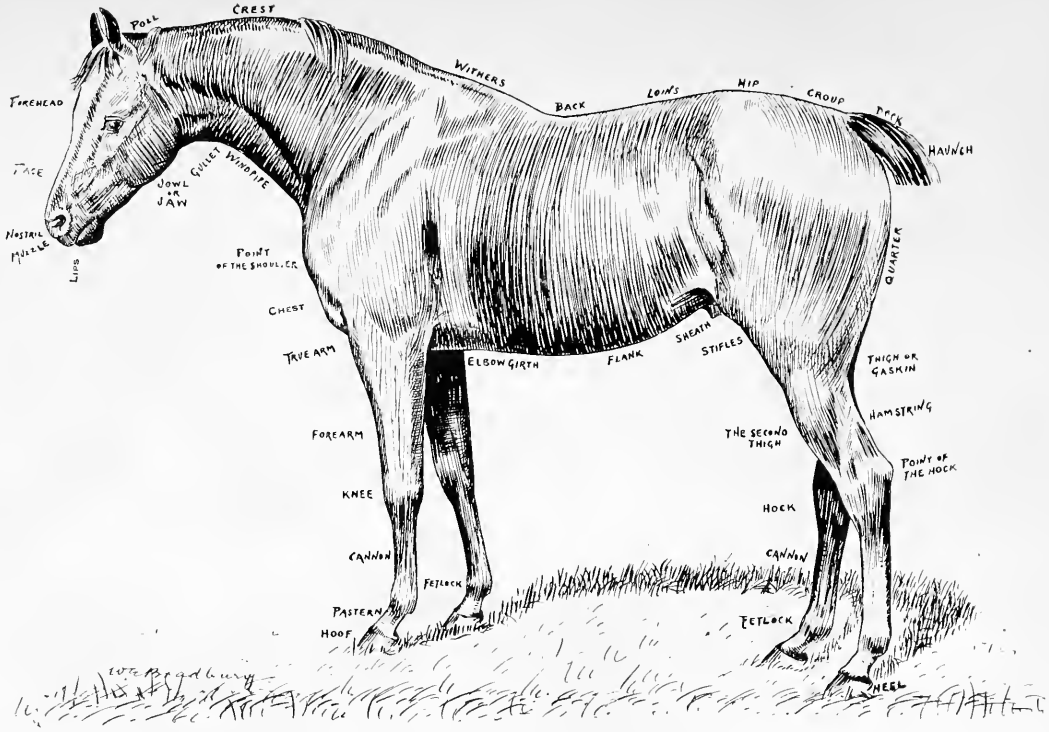

PLATE 2.—THE POINTS OF THE HORSE.

THE MANAGEMENT OF THE COLT

IN this, the twentieth century, it is a serious undertaking to profess to teach anything new and valuable concerning the training and management of the Colt, and I am not at all oblivious to the fact. It is also an equally formidable task to convey such information and instruction in such a form as to be acceptable to horsemen of experience, and at the same time sufficiently lucid and simple as to be readily understood by those who make no pretensions to a special knowledge of equine matters. Moreover, it must not be supposed that it is possible to teach, by books alone, the art of handling colts and horses thoroughly and efficiently. Much useful—even invaluable—information may be imparted in this way, but it must be supplemented by practical experience. And there is also the personal equation to be taken into account, before we arrive at all the conditions which go to make the perfect horseman. There is a certain characteristic manner of approaching and dealing with a horse which indicates the true horseman, and the presence or absence of this particular manner tells the expert onlooker at once whether or not the person in question is really accustomed to, and capable of, the handling of horses. This characteristic manner is not, of course, to be acquired by any amount of theoretical teaching, but by actual practical experience alone. However, theoretical knowledge is invaluable and essential; and it is certainly a pity that, considering the numerous facilities that exist in this country for the acquirement of technical instruction, so little attention should be paid to that side of the question by the majority of those who handle horses professionally. The knowledge they do possess has been usually acquired entirely in the course of their own practical experience, and, like their predecessors, they have arrived at a certain stage of "proficiency"—but seldom gone beyond it. There is a very numerous section of the horsey fraternity who claim to be capable of breaking in young horses, but whose sole qualification for doing so is limited to the possession of sufficient physical pluck to mount and bully them for

the edification of the onlookers. They have not the slightest idea of any rational and scientific basis for the pursuit of their adopted calling. It is notorious, as a matter of fact, that the ranks of the professional horsebreaker, and of those who profess to undertake the management of colts, are very largely recruited from the failures, incapables and derelicts from kindred agricultural pursuits. The word "horsebreaker" is in fact very frequently synonymous with the word "loafer," and it is certainly time, in my opinion, that some serious attempt were made to elevate what is really a scientific profession to a higher level. This can only be done by insisting that those who make a living by the practice of breaking horses shall possess a fair knowledge of the scientific aspect of the question, and be properly qualified, both theoretically and practically, for the work they undertake to do. One of the most mischievous mistakes, made almost universally by the class of breakers alluded to, is to subject all horses to a precisely similar course of treatment, whereas the very essence of successful breaking is to understand each animal's particular temperament and idiosyncrasies, and to adapt and vary the training in accordance with the requirements of each particular case.

I think I may claim to have effected something in the direction indicated above. When I wrote my first work on the horse (in 1888) I had conducted about 300 classes—consisting of from 40 to 500 members in each—in the various populous centres of Great Britain, and many of those who attended them are now recognized experts in the art of horse training and management.

The first essential in the would-be horse-trainer is that he must either possess naturally, or acquire, the art of controlling himself and his temper. Without this it is impossible for him to attain the ability to control the horse. A quick-tempered or irritable man will inevitably develop a bad-tempered or nervous colt, and a man with a really vicious and uncontrollable temper will not take long to create a really vicious and dangerous horse. It is not *always* the system which is responsible for failure in training—by any means.

As before stated, the fundamental mistake made by many breakers is to put all colts under the same cast-iron curriculum of training, in place of modifying and adapting their methods in accordance with the requirements of each individual animal. No two colts or horses possess precisely

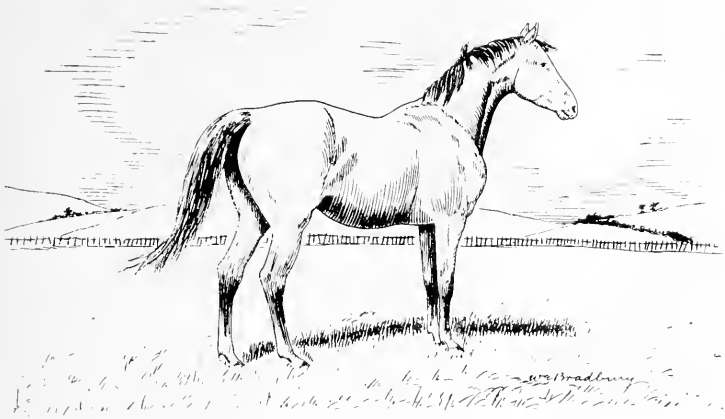

PLATE 3.—THE UNBROKEN COLT.

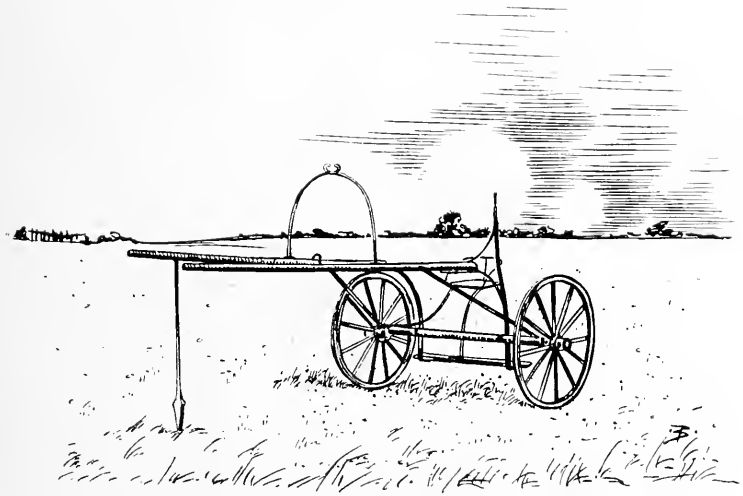

PLATE 4.—THE AUTHOR'S PATENTED SINGLE SKELETON BRAKE.

the same natural inclinations, character and temperament ; and each, therefore must be dealt with, to a more or less extent, in a different way, in order to secure the best results.

The same mistake is committed in the treatment of Vice, as in the general training, namely, that of applying the same remedial measures to every case, and not taking into consideration the different causes which may have produced the particular vice in question. Take, for example, the vice of "kicking." In one case the "kicker" may be a "slug," and in another case it might be a horse of an entirely opposite temperament, namely, a very highly-strung, nervous and sensitive animal. Yet the curative treatment applied would be precisely the same in both cases. This is an outline of what would probably take place. Each would be harnessed into a double brake, with a kicking-strap on, and driven alongside the break-horse. In the case of both the animals this treatment is crude and abortive. The only result is that they are prevented by the straps from injuring themselves or the vehicles when kicking. The *desire* to kick is in no sense eradicated, the "kick" being simply bottled up for use on some future occasion when the kicking-strap is not in evidence. Of course the proper and scientific way of dealing with a kicker is to subject it to a course of special training, based upon a knowledge of the temperament of the particular animal in question. In many different cases the same *kind* of treatment would doubtless be applicable, but it should be modified according to the requirements of the case. Of course this applies equally to colts and horses.

With regard to *lunging*—the at-one-time universally accepted remedy for all the vices that the horse is heir to—I am quite convinced that, although a very little of it may not be positively harmful, it is quite useless in itself, and best left alone altogether. It is at best only a lazy way of exercising a colt, is often done with little care or judgment, and tends to make one side of the animal's mouth harder than the other—a defect which is always difficult to remedy. Hundreds of colts have been ruined by being "lunged" by lazy, thoughtless, or unskilled hands. Bad habits of various kinds have been generated and confirmed by it, and evidence of its abuse is frequently to be found in the shape of lameness, curbs and spavins.

As a means of obtaining methodical control over the animal, the lunging-line is absolutely impotent. In no sense can it enable the breaker to govern the horse's movements, save in one solitary respect, namely, when it tries to

break away. And even then the power is limited and dependent entirely upon the strength and determination of the breaker.

To prevent the animal from running inwards when being lunged, an unequal pressure has to be put upon the bit by the breaking tackle, which is tantamount to asking the colt to go *straight forward* in opposition to a constant pull in *another direction*. By this process it cannot possibly learn to carry its head and neck dead straight ; on the contrary it is absolutely prevented from doing so. It is also bound to bend its neck and body when circling. Sometimes the shortening of the outer rein to prevent the animal from running in towards the breaker is insufficient for this purpose, and the presence of an assistant, with a whip, becomes necessary. In such cases the assistant must have as thorough a knowledge of his portion of the work as the trainer. He must, moreover, be very fit and well himself in order to be able to keep it up for any length of time.

To sum up, I think the system of lunging is full of risks, drawbacks and disadvantages, and, in my opinion, the long-rein treatment is incomparably better in every way.

As is generally recognized, the younger the colt when its breaking commences, the easier is the subsequent work of the trainer. At an early stage of its existence it will, in the ordinary course of things, be brought up to be gelded ; and it is at this period that a few days' " handling," such as haltering and leading, gentle grooming or rubbing all over with a bulky soft cloth, picking up the feet, etc., will be very useful. The future work of the trainer will be materially lessened thereby, and risk, time and expense will be saved. In the Colonies, however, the stockmen appear to have no time for these preliminary processes. When the time arrives for gelding there, the colt is yarded with its dam, and is either lassoed or a halter is put over its head with a long stick. It is then operated upon, driven into another paddock far away from the dam, and allowed to run wild until wanted for use. Wherever possible, however, the early training should always be given.

If the trainer has to catch the colt, the *modus operandi* must depend entirely upon circumstances. In an Australian stockyard it is often done with the whip, but this mode requires an expert. The animal to be caught may be of any age—a four-, five-, or six-year old. Should there be a " crush " (see Plate 53) handy, the colt is driven into it and haltered, in spite of its kicking, striking, and (sometimes) biting. I do not advocate the use of the

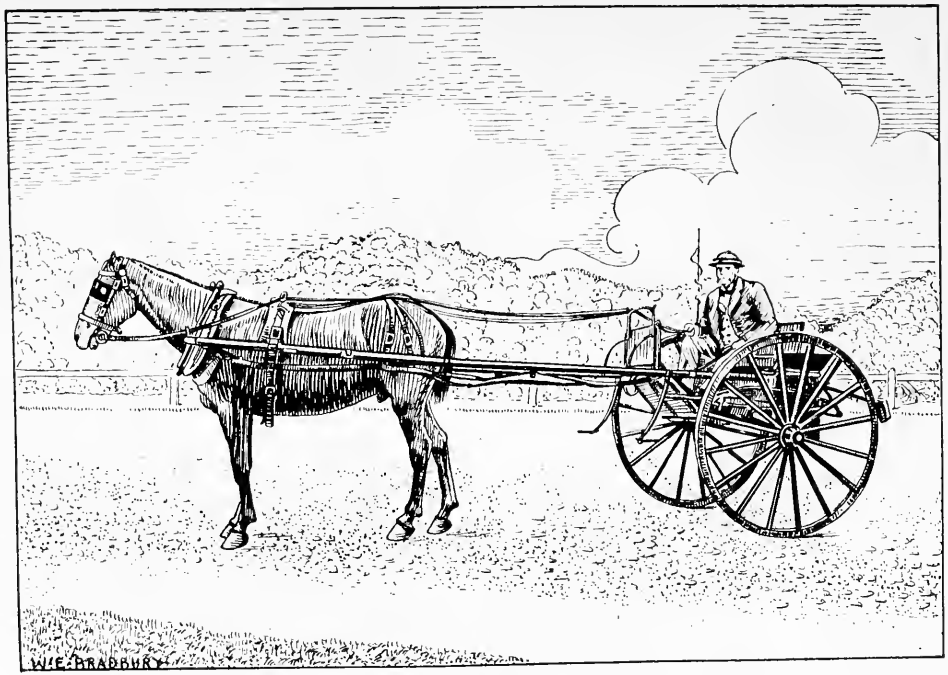

PLATE 5.—THE AUTHOR'S LONG-SHAFTED EXERCISE BRAKE.

" crush " for absolutely wild horses, unless time is an important consideration, on account of the risk of injury to the animal. It usually becomes so inordinately terrified by the immediate proximity of man for the first time in its life, and its struggles to escape become so violent, that there is always serious risk of its crippling itself. But on large British farms, where much stock (cattle as well as horses) is bred, the " crush " would be found extremely useful and economical.

In order to catch the colt with a whip you should proceed as follows : send it round the yard for ten minutes, or longer, if necessary, to quieten it down somewhat and accustom it to your presence, and refrain from cracking the whip meanwhile. If an application of it should be necessary, just switch the colt lightly on the quarters. When it has become steadier in its movements, allow it to gradually subside into a walk, and then crack your whip to attract its attention. Take up a position in front and rather to the left of it, and without any excitement or noise cause it to stop. While it is facing you, flick it lightly on the back of its quarters to induce it to walk towards you, which it will probably do. Then walk backwards at the same rate as the animal walks forwards, to induce it to follow you. Every colt may not immediately do this, but may perhaps jump away again and canter round a time or two. If so, be patient, and go through the proceedings again, cracking the whip, etc., as before. In most cases the colt will now show an inclination to follow you, which should be encouraged. Then give it a slight flick on the shoulder and send it away again. After it has been round a time or two crack your whip again and make it stop, and then repeat all you have previously done up to this stage. The colt will soon learn to stand when required, and also to approach you with some degree of confidence. When it does approach you, walk backwards as before, and this time it will follow. Repeat this training as often as you think necessary, in order to gain the colt's complete confidence, and thus facilitate the process of haltering. It is a good practice to touch and stroke the colt at every opportunity with the whip stock. To halter it you must proceed as follows : Extend your left arm in front of you, and, while slowly approaching the colt, move it gently up and down until you are able to get your hand on its nose, simultaneously distracting its attention by rubbing its neck gently with the whip. Previous to doing this you should have had the halter (always a strong rope one) hanging from your left hand, and it should have the shank pulled through far

enough to allow the part which will come at the back of the lower jaw to hang right down, thus forming a large loop (the shank must have a knot in it, so that when the halter is pulled it will not jamb and cut the lower jaw—see Plate 6, Diagram 3). To get the head collar on, you must work it up in front of the colt's face until you are able to pass the poll-piece over the ears. You may then pull the shank, and the halter is on. The tying of the throat-lash may be postponed until the first convenient opportunity. This proceeding is an interesting one to watch, if skilfully performed, and there is always a certain element of excitement in it, for the onlookers as well as for the principal. It only remains for me to add that this method of colt-catching necessitates a lot of experience and practice before it can be executed successfully and neatly.

I have gone fully into the question of colt-catching, and described the best methods of doing it, in a special chapter on the subject ; but it may not be out of place here to describe a method which is very common, very unscientific and stupid, and altogether to be condemned. This is how it is done : A number of the farm-hands proceed to the paddock and commence to drive the animal towards the stable, usually making so much noise in doing so that the colt becomes terrified and gallops in all directions. When it turns quickly, which it is sure to do, it is liable to slip and fall heavily on its side. An accident of this sort, which of course may easily be attended with serious consequences, is usually regarded by the men as a matter for self-congratulation. After more trouble and noise they finally succeed in getting it into the box, by which time it is in such a condition of nervous excitement that it is ready to fight any one who approaches it. One or two of the men follow the animal into the box, generally with a few loud "Whoas!" to impress upon it that *they*, at all events, are not afraid of it. Eventually one of them succeeds in clutching the colt's mane with the right hand, and hangs on its nose with his left one, compressing the nostrils so tightly that it becomes almost impossible for it to breathe (it must be remembered that the horse can *only* breathe through the nostrils). The man slips his right hand up the side of the colt's head, seizes its ear, and hangs his weight upon that also. Of course, the animal "fights for its breath," and a big struggle ensues. A second man approaches with a halter, and endeavours to put it on. Matters now assume a really lively aspect. The animal, still fighting to obtain breath, begins to strike, kick out, and plunge until it finally clears

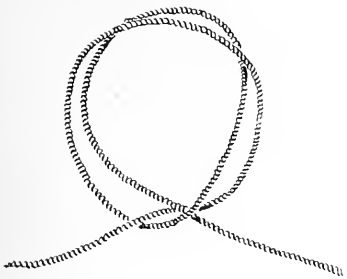

Diagram 1.
A Double Hitch.

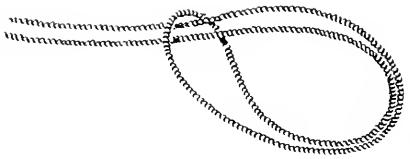

Diagram 2.
A Slip Knot for holding a Leg when thrown.

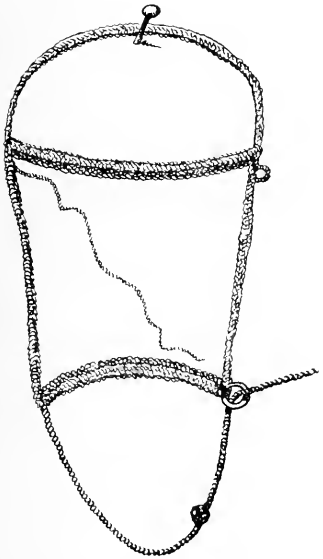

Diagram 3.
Halter with a Choke Knot
in the Shank.

Diagram 4.
A True Lover's Knot: will not slip.

Diagram 5.
A Granny—the above wrongly formed—
will slip.

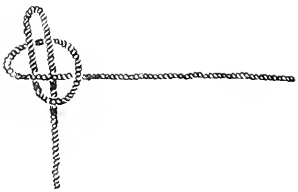

Diagram 6.
The Slip Bow Knot tying the
"Galvayne" Strap.

all its tormentors out of the box, and they ought to consider themselves fortunate if they escape with whole bones from the mêlée. After their forced exit from the scene of the conflict, the men hold a consultation outside, declare the animal to be a "dangerous brute," and adopt another plan of attack. One of the "trainers" climbs upon the rafter, and attempts to drop the looped end of a strong rope over the colt's head. This is in time accomplished, and the halter is slipped on whilst the animal is in a half-choked condition. The looped rope is then removed from the colt's neck, tied to the end of the halter-shank to lengthen it, and the stable door is opened. If the animal declines to come out, it is dragged out by main force, hanging back and struggling violently all the time. The halter-shank, not being knotted or "choked," embeds itself into the flesh of its lower jaw, and produces such pain that it plunges and fights with increased desperation. If there happens to be a haystack handy, a long rope is secured round it and the animal is tied to that. This would not be an objectionable plan in itself, but unfortunately the proceedings do not terminate there. While the colt is thus secured, the men, out of pure "cussedness," frighten it in order to *make* it pull back; it of course does so with considerable violence, and with a strong probability of sustaining injury in consequence.

I once, while driving from Ballantrae to Stranraer, pulled up for nearly an hour in order to watch some half-dozen men "teaching" a fine Clydesdale colt to lead. The dam, a beautiful mare, was standing a short distance away, held quietly by a boy. After a lot of trouble the men succeeded in getting the halter on, and then commenced to pull the colt *away from its dam*, instead of leading it alongside, as they ought to have done. Maddened by the pain caused by the halter-shank cutting into its jaw, it rushed furiously at the men two or three times, and sent them flying in all directions. Finally, in its desperation, it threw itself over backwards on the ground. It was then kicked (*not* in a brutal manner), to ascertain if any life remained in it or not. At this stage I drove on, relieved to get away from such a scene. I have simply referred to it in order to indicate the stupid and utterly unnecessary brutalities that may be, and are, perpetrated by men who may be well-meaning enough in themselves, but who are totally ignorant of the nature of the animal they are attempting to train.

Before concluding this somewhat discursive chapter, I should like to point out the folly of the not uncommon practice of entrusting the training

of the colt to cheap, and therefore probably most unskilful hands, and to boys. The latter invariably play with the animal, tease it, and, what is worse, very often bully it. Many a valuable colt, which has never given the least indication of Vice up to the time of leaving the breeder's hands, has been returned to the owner a vicious and worthless animal, ruined by ignorant and unskilful breaking. A Yorkshire breeder once told me that he estimated he had lost at least £600 in two years, solely through this, and I have no doubt that his experience in this respect was not at all unique.

THE BASIS AND PRINCIPLES OF THE "GALVAYNE" SYSTEM OF TAMING AND TRAINING

THERE are few, if any, writers on "breaking" generally who have even attempted to explain the basis upon which they have formulated their systems, or methods. Of course those writers on the subject who were, or are, practical experts themselves must be supposed to have had a basis of some sort or other, but they cannot be said to have succeeded in expounding it to the ordinary reader, in those few cases where any attempt has been made to do so. In fact, the existing works on the subject are usually of so abstruse a nature that it is difficult even for the expert, familiar with all the details and technicalities of the profession, to follow them intelligibly. Unfortunately, too, many of the writers on "breaking" and kindred subjects have not acquired their information from practical experience, but from the same source as that by which they have sought to impart it—namely, books. I have frequently heard practical men remark, "What is the use of buying books on Horse-Breaking and Management? They can only consist of rehashes of what we have already read." And it must be admitted that there is only too large a substratum of truth in the remark. In my opinion, however, it is possible to write an entirely original, and at the same time useful and practical, book on the Horse, and the present is a serious and conscientious attempt to do so.

In expounding my system of handling, training and managing the horse I have made a special feature of endeavouring to give a solid, practical and scientific reason for every step I advocate and the advice I give is based upon actual, practical and personal experience, and the most careful observation. The system with which my name is identified is the result of a lifetime's experience of horses of all classes, kinds, and nationalities, and of the closest observation of their habits, diverse temperaments, and idiosyncrasies. In the course of five years of public teaching and public exhibitions in Great Britain I afforded ample opportunities of testing the soundness and efficacy of my theories, by the handling, during that time, of *thousands* of colts and

horses, without having a single failure recorded against me, and I think it would be superfluous to say more to justify my claim to speak with a certain amount of authority on the subject. Without further preamble, therefore, I will commence the practical exposition of my system, touching first of all upon the natural laws and instincts of the animal.

The horse is, by nature, *gregarious*, in its wild or semi-wild condition. Under such conditions it is always found in "mobs"; and in consequence of this gregarious tendency it is always easier to drive a mob of wild horses than a single wild one. In fact, even in the trained or civilized horse the gregarious instinct is not entirely eliminated. Anyone can easily satisfy himself of the truth of this by turning such a one loose in a field; if there are any others there it will almost invariably neigh and make towards them at once. In consequence of this tendency I always advise that a colt should be broken by itself. It should be ridden out alone, and its training effected out of view of other horses; otherwise its persistent efforts to join their company will entail upon the trainer an immense amount of avoidable trouble. If the colt be ridden a number of times alongside another it will refuse to leave the stable or premises without a mate, and if absolutely forced to do so will develop a tendency to insubordination, rearing, restiveness, etc., rendering its "breaking" frequently a really dangerous task.

Another natural law or instinct of the colt or horse is to *follow* any moving object with which it is unacquainted, or with which it is unfamiliar, if that particular object be moving away from it. But directly the object stops, the animal will stop also. If the object turns and approaches it, the horse becomes alarmed, whereas its predominant feeling hitherto has been, apparently, curiosity. If being ridden at the time, its rider will have difficulty in retaining his seat, and in keeping its head towards the object. Should the latter continue to approach, the animal's fear will increase to such an extent that it will become violent, and eventually turn and bolt. An experience of this kind may implant in it such a terror of the object in question that much careful handling will be required before the feeling becomes thoroughly and permanently eradicated. In fact, one such incident may in itself suffice to develop in the horse a confirmed habit of bolting, unless timely care be taken to neutralize its effects by proper training.

When riding through the Australian Bush, with perhaps one or two companions, I have frequently noticed that when coming suddenly upon a mob

of wild or semi-wild horses they have, at first sight, galloped away a short distance, turned and looked at us for a few moments, then followed us. This they have done for miles, but if any one of us turned abruptly and rode towards them, they would at once stop, turn, and be off at a gallop. If, before they were too far away, we turned again and went on our road away from them, they would usually turn also and follow us again.

A colt frequently shows alarm at any strange stationary object, such as anything unusual lying in a paddock or field. Directly it sees such an object it will usually walk a few steps towards it, then commence to walk round and round, snorting from time to time (it is to be noted that snorting is frequently merely an indication of curiosity, as it is also an expression of fear, defiance, or rage). It will gradually reduce the circles, getting nearer and nearer to the object, until it finally puts its nose upon it. Its object in doing this is to *touch* it—not primarily to smell it. In the horse the nose is really the *forehand*, and it is by the sense of touch that it reassures itself with regard to anything of which it may have been afraid. It will be at once apparent to the reader how flagrantly injudicious and irrational it is to flog or spur a horse for being afraid of any particular object, as the animal naturally associates and identifies the object with the abuse and maltreatment it receives. Many horses that may have shied at any small, unusual object in the road, through nervousness, have developed into confirmed "shyers" through being whipped for shying in the first place, and the demoralizing effect of such treatment is evidenced by the fact that, after shying, they jump and *cringe*—in expectation of the whip.

Kicking is one of the horse's natural, primitive laws and inherent instincts, the eradication of which should be one of the most essential features of the animal's early training; although, strange to say, this obvious fact is practically ignored under the old system of breaking and training, and no specific instructions for the treatment and cure of the habit are given in the existing works on the subject—so far as I am aware. A horse that kicks, say at a leading bar touching it on the hocks for the first time, *and succeeds in clearing itself*, can never be considered really *safe* afterwards, unless subjected to a thorough course of scientific treatment on the lines laid down in the present work in the chapter devoted to this matter.

With regard to the Senses of the Horse—it may appear superfluous to the general reader for me to state that they are five in number, the same as

our own, namely: feeling, hearing, seeing, smelling, and tasting. But, astonishing as it may seem, it is nevertheless a fact that there are, or were, very many professional horse-breakers and experts entirely ignorant of this elementary fact. During my lecturing tour in Great Britain in the "eighties" I frequently asked of well-known "breakers" the simple question, "How many senses does the horse possess?" and not in a single instance did I receive an accurate answer. It never seemed to have occurred to any of them to think about the matter at all. Under such circumstances is it to be wondered at that the methods of breaking and training generally adopted hitherto have been irrational and unscientific, and that many conspicuous failures have been the result? Surely no system of "training" any animal can possibly be successful and complete if it be not based upon an accurate and intelligent knowledge of the natural laws of the animal, and of its senses, instincts and idiosyncrasies.

Of all the senses of the horse that of *Feeling* is the most important, from the "breaker's" point of view, owing to the number and variety of the forms in which it has to be educated. For example, the animal must be habituated, through the training of this sense, to the halter, bit, collar, saddle, the harness generally, the whip, the spur, etc., etc.—each item of which demands a separate and special training in itself. The sense of *Sight* is next in importance, from the same point of view. The animal's range of vision is not so extended as our own, although a contrary impression might be created by the fact that it frequently notices the approach of an object before its rider does so. The real explanation of this, however, is that the rider is thinking of extraneous matters and is not incessantly on the watch, whilst the horse instinctively and constantly observes its surroundings.

The sense of *Hearing* is fairly strong in the horse, and the animal frequently hears sounds that escape its rider, usually, however, for a similar reason to the one indicated above, namely, that its attention is not otherwise engaged, and that it is constantly open to receive outside impressions through the medium of its primitive senses.

The sense of *Tasting* is, of course, a purely local one. The animal, with its tongue, ejects from its mouth anything which is offensive to its sense of taste, and demonstrates its disapproval and disgust by extending its head and curling its lips. It is by operating upon this sense that the circus-horse trainer is able to make his horse appear to laugh.

The sense of *Smelling* is not, in my opinion, strongly developed in the horse, although many think otherwise, basing their opinion upon the frequency with which the animal snorts. But there is really no connection between the act of snorting and the exercise of the sense of smelling. Snorting is the animal's method of expressing a variety of emotions, such as curiosity, nervousness, terror, anger, and defiance, and also vice. The kind of snort, and the vehemence with which it is emitted, indicate readily, to those in the habit of handling unbroken stock, the real nature of the emotion the animal wishes to express.

To ensure the perfect training of the horse it is absolutely imperative that those of its senses which are capable of tuition be thoroughly and intelligently educated. The first to be dealt with, although, as previously stated, not the most important, is that of *Sight*. The horse must be taught to recognize its trainer, and allow the latter to approach it without exhibiting fear or resentment. It is quite customary for horsemen to approach a horse in the stable solely on the near, or left side. This is a mistake. To insure the perfect training of the sight of the animal it must be accustomed to being approached with safety from *either* side, the advantages of which will be obvious. I may here mention, for the information of the novice, that in stable parlance the *near* or left side is called the *right* side (on which to approach the horse), and the *off* or right side of the horse, the *wrong* side. The reader has probably heard on more than one occasion some such remark as the following, "Don't go up on the off side of that horse, or you will get kicked." But there is no reason whatever, except the lack of proper training, why a horse should have a quiet and safe side, and an unsafe and dangerous one. It should be, and can be made, equally approachable from either side.

It is a very remarkable fact, although it will appear incredible to many of my readers, that the horse, owing to a physiological peculiarity of the optic nerves, recognizes objects with one eye and not with the other. That is to say, it may know an object with one eye and be perfectly familiar with its appearance and individuality if it sees it through that organ alone, but quite fail to recognize it if seen through the medium of the other eye. Each of the organs appears to work entirely independently of the other, so far as its perceptive powers and functions are concerned. Hence the necessity for each eye to receive a separate and distinct education. In proof of the foregoing I may instance the well-known fact that if a colt be mounted on the off

side, after it has been accustomed to be mounted on the near side, it will rebel the first time, solely because it does not actually recognize with the right eye the actions of the rider with which it is perfectly familiar with the left. As a further and conclusive illustration of the truth of this theory, I may refer to the case of trick-horses. Owing to the designedly one-sided training they have received they invariably, when entering the circus, circle to the left, with their near side to the trainer. These animals will obey every sign of the whip, to start, stop, back, or do anything else, so long as they are circling to the left in accordance with their custom ; but if the trainer were to compel them to circle to the right, and endeavour to make them perform their tricks through the medium of the right eye instead of the left, his efforts would be entirely abortive. Of course, had each eye received an equal amount of independent training, the trick-horse could perform the same tricks equally well from both sides.

The sense of *Feeling* is the one that requires the most patient and assiduous training. In the first place the animal must be accustomed to the feel of the halter, a pressure on which must indicate to the colt that progressive or forward movement is required. The instinctive impulse of the animal, when it feels the halter clutching it round the head and throat for the first time, is to free itself from its embrace. The more it pulls, in order to accomplish this, the greater is the punishment it receives, and the usual result, under the old system of training, is that the colt continues to pull until utterly exhausted, and "choked down," or "something" else happens. On one occasion I was called upon to treat a good stamp of a half-bred colt, rising four years. Four of the farm hands were leading it, and trying to bring it into my marquee. But the tent was very crowded, and directly the animal saw the people it became frightened and pulled back vigorously. Some of the bystanders offered their assistance, and eventually about ten of them caught hold of the rope to assist in pulling the horse into the tent. The result however, was, that instead of pulling the animal in, they were all pulled *out*. I saw at a glance what was the matter. The shank was buried into the colt's jaw, lacerating it and causing intense pain. In its endeavour to ease itself from the painful pressure the colt naturally threw its head up, instead of down, rendering it impossible for it to enter the marquee, the entrance to which was rather low. I remarked to those in charge that if they would hand over the animal to me I thought I could get it into the tent quite easily.

First of all I loosened the head collar, and pulled out the shank. Then I "choked" the latter, to prevent it from pulling tight again and cutting the jaw as before, and so that it *would* pull on the poll-piece. I took the colt aside to effect these alterations, in order to mystify the onlookers as to the *modus operandi*. When ready I walked towards the tent, the animal quietly following me in, amidst an outburst of applause from the spectators, and such ejaculations as "What wonderful power over the horse Mr. Galvayne must possess!" I merely remarked, "No, gentlemen, simply a little common-sense, and the ability to utilize it."

I may be permitted to give one more illustration of the creation of vice in a colt by the irrational policy of attempting to master it by physical force and brute violence, instead of by the exercise of the superior intelligence that man is supposed to possess. The colt in question was brought to me when in Scotland. It had been rendered dangerous to approach, having already kicked in several of its owner's ribs. The message delivered along with the animal was, "Look out, he is a perfect demon!" This was very considerate on the part of the owner, and I duly thanked him for his friendly warning. In some previous cases of a similar nature the owners had purposely withheld any intimation of the dangerous proclivities of the animals they were entrusting to me—a mean and despicable omission, which in most flagrant cases I did not omit to publicly denounce. The first proceeding of the animal in question was to rush directly at me, striking out as straight as any boxer. It repeatedly struck my hands off the halter-shank. I found it impossible to get my hand on to its nose, which had been cut by the cavesson, for directly I attempted to touch the sore place it struck out viciously. I therefore utilized my "third hand"—the nature and uses of which I will fully explain later on—and allowed the colt to practice upon *that*, which it did by striking it some twenty times or more. Eventually I succeeded in touching the animal very gently on its face and head with my hand, and in getting the leather head-collar on, thus putting an end to all personal danger. As I subsequently learned from one of the men on the farm, the colt's violence had been created entirely in the process of haltering and leading—which was in exact accordance with my anticipations. I have mentioned these two incidents to illustrate the folly of resorting to violence to effect what can be accomplished far more thoroughly, and with infinitely greater ease, by methods of quite a different nature.

THE ART OF "GALVAYNING"

"GALVAYNING" is really a scientific utilization of the animal's strength against itself, and is diametrically opposed to the old system, under which "training" frequently resolved itself into a contest between the brute force of the horse on the one side and the brute force of the man—assisted by mechanical appliances—on the other. It embodies and illustrates the principle upon which the whole of my system of treatment is based.

When the idea of utilizing the animal's strength against itself first dawned upon me, I accomplished it by shortening the stirrup leather and tying the horse's head round towards the stirrup iron—thus causing the animal, when moving, to revolve until it became more or less giddy. But experience taught me that this elementary process was inadequate to meet all requirements; the supplementary use of the "third hand," and other details, suggested themselves to me in the course of practical experiments, until ultimately I elaborated my present system, which has successfully stood the test of nearly twenty years, and which I have endeavoured to explain below as lucidly and concisely as possible.

The "Galvayne" position is attained by tying the animal's head round with the halter-shank, or the "Galvayne" strap, to its tail. If the horse has a long tail, the short-looped "tail-cord" is easily fixed (see Plate 7, Diagrams 7, 8 and 9), or it can be dispensed with entirely by tying the knot, as described, in the tail itself, dividing the hair above it, passing the "Galvayne" strap through it, and finishing off with a slip bow knot (see Plate 7, Diagram 10). If the horse has a docked tail, it is sometimes a little troublesome to fix the cord, but it may be done as follows: Take the plain end of the cord and make a similar tie to the one made when tying it to a long tail, but substituting for the hair in the long tail a small piece of the hair of the docked tail. Take as much hair as can be gathered, suitable for the purpose, without straining it from such extreme angles as to risk pulling it out altogether. It should be selected from the upper part of the docked tail.

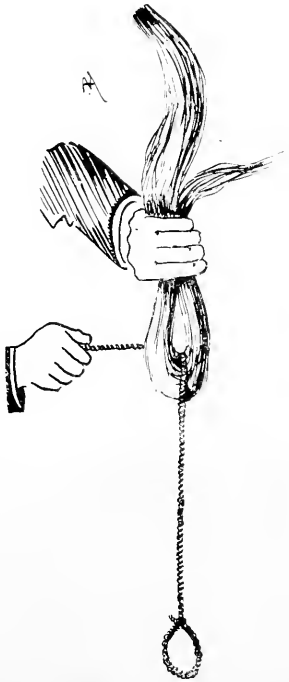

Diagram 7.
Doubling the Tail preparatory to putting the Half Hitches on with the plain end.

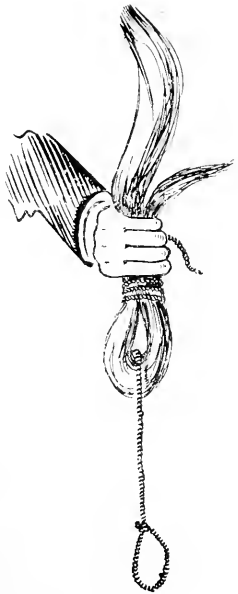

Diagram 8.
The Hitches Tied.

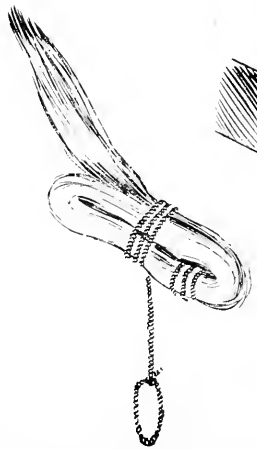

Diagram 9.
The portion of the Tail doubled up with the Hitches on, showing the Half Hitches made with the looped end

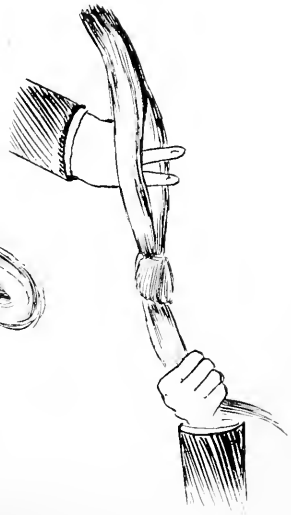

Diagram 10.
Showing the plain Knot in the Tail, and the Hair divided ready for the "Galvayne" Strap.

the cord, make two half hitches above this tie, double the tied part with the hitch on *upwards* against the dock, then finish off by making two or three half hitches round the dock with the looped end of the cord. Take a tight hold of the loop of the cord, with the right hand, having the left against the knot, and give several strong pulls to make sure that the cord is firmly secured and will not slip.

It may occur to the reader to ask how he is to approach sufficiently near to the quarters of a vicious animal to enable him to perform the above operations without running the risk of being kicked. There are several ways by which it may be done in safety. The first method, which should always be adopted in a case of emergency, is to take hold of the halter, say with the left hand, near the head, and swing the animal round and round sharply several times by pulling its head towards you and simultaneously pushing its quarters away with your right hand—making yourself the pivot round which the horse revolves. A few sharp turns will cause it to become somewhat stupefied, and whilst in this condition you can fix the tail cord with perfect confidence and ease. With a long-tailed horse it is not even necessary to push the quarters at all. There is no difficulty or danger in grasping the long tail, *after* pulling and holding the head round, and using it as well to swing the animal round.

The second method is to blindfold the near-side eye (as you are working on that side) by slipping a soft felt hat under the cheek of the halter, totally covering the eye. If the animal resents the treatment and kicks, it will, instead of kicking at you, kick out straight behind; or, in any case, as you have its head held round towards you with your left hand, the kick will be directed away from you. Moreover, the fact that the full length of your right arm is between yourself and the horse's quarters constitutes a further guarantee of personal safety. It is *not* advisable to blindfold both eyes, for the following reason. The fact of the animal being suddenly rendered practically blind in both eyes naturally alarms it, and concentrates its whole attention to the exercise of its other senses. It becomes suspicious of some contemplated injury to it on the part of the trainer, and is very apt to strike or kick out instinctively in self defence, whereas, on the other hand, the blindfolding of one eye only enables the animal to see with the eye on the side opposite to the one upon which you are working, and directs its attention to *that* side, leaving you to operate on the blinded side in security.

The other precautionary methods are such as holding up the fore leg on the side upon which you are working, or affixing No. 1 twitch. In the various ways suggested above I have handled hundreds, I might say thousands, of horses, and have never been kicked once. My advice, however, is that the learner should have a little preliminary practice on a quiet animal, taking just the same precautionary measures as if it were actually a vicious one. I may here mention that the "Galvayning" must always be practised in a suitable ring, about forty-five feet in diameter, or in a fenced enclosure as described later on.

When you have succeeded in passing the "Galvayne" strap through the tail or cord, you must pull the strap quietly and slowly until you have brought the horse's head round to an angle of thirty-five or forty degrees, or to one that will compel the animal to turn round and round, almost upon its own ground (see Plate No. 8). Then fasten the strap (without twisting it) quickly (you may have to do this whilst the horse is actually turning) by a slip bow knot to the tail—if a long tail, by dividing the hair above the knot (see Plate 7, Diagram 10), and passing the strap through it; if a short one, by passing the strap through the loop at the end of the tail cord. Stand back and give the animal room to turn, so that you can judge by its movements whether you have done your work correctly. If the angle at which you have tied the head be too acute, the horse will revolve too quickly. On the other hand, if the head be comparatively straight with the body, it will not turn round at all, but will probably succeed in forcing its head quite straight and go right away. Should it effect this you must move smartly in front of it and catch it, and at once tighten the strap. If it has been necessary to blindfold the animal on one side with a cap, you must snatch the latter away the moment after you have tied the strap, and before releasing the horse. When released it will turn round and round, eventually staggering slightly and coming to a standstill. If the angle at which its head has been tied be too acute, it may revolve so quickly that it will become dizzy and lie down, but you may prevent the latter by jumping in as its head comes towards you, and slackening the "Galvayne" strap, thus allowing the head more freedom and lessening the rapidity of the revolutions. Even if the animal should stagger down, the position in which it is tied will prevent the possibility of injury, always providing that the ring be on soft and suitable ground, for it does not really *fall* in the ordinary sense of the word, but merely staggers through dizziness, and lies

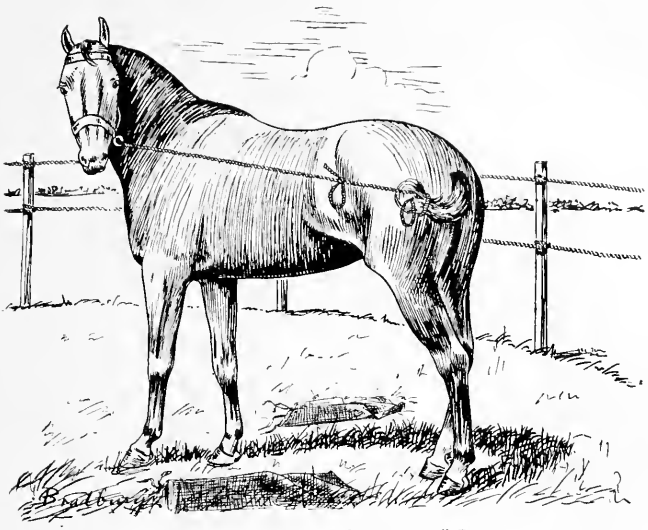

PLATE 8.—A COLT IN THE "GALVAYNING" POSITION.

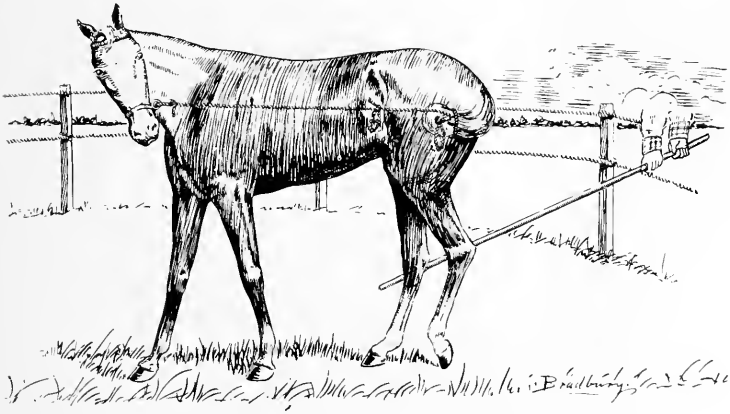

PLATE 9.—A COLT BEING "GALVAYNED" AND THIRD-HANDED FROM BEHIND.

down without any violence or harm whatever. To enable it to rise, it is sometimes necessary to untie the " Galvayne " strap, and this is easily effected by pulling the loose end which hangs from the slip bow knot (see Plate 6, Diagram 6). It is absolutely necessary to adopt this style of knot when tying the " Galvayne " strap, as alterations and adjustments have to be rapidly effected from time to time in the course of the operations, and this knot is the only one, so far as I know, which meets all requirements.

It will perhaps be advisable, at this stage, to describe more explicitly the kind of enclosure best adapted for the " Galvayning " operations. A hard yard, irrespective of size, is *not* suitable. Neither is a small yard, if it be surrounded by a wall, as the animal may strike its head against the wall when turning round and receive serious injury. The most suitable place for " Galvayning " is a ring, pitched on soft ground, in the corner of a field, encircled by two ropes, as previously described, or a *fenced* ring with sufficient bush all round the inside of it to prevent the horse from striking the fence when turning round or falling. In the case of *shod* horses, the shoes on the hind feet must always be removed during the operations, to prevent possibility of injury to the coronets through overtreading.

Once you have got the horse properly " Galvayned," watch it carefully for a little while before proceeding further, to ascertain the kind of temperament you have to deal with. If a nervous or excitable subject, it will " take more out of itself " in five minutes than a stubborn or sulky one will do in an hour. With an animal of the former class you must modify your treatment by handling it very calmly and quietly, refraining from the use of loud exclamations and from cracking the whip, and, generally speaking, from increasing its agitation in any way. With a stubborn animal the case is different. In fact, it is sometimes necessary to actually *use* the whip to make it move at all. The whip, however, should never be applied to the body, but only on the legs below the knees and hocks, and gently on the outside shoulder, accompanied each time (without fail) by the command " Get up!" given smartly and authoritatively. After having taught the animal to obey this command, use the ordinary " click " to start it, at the same time giving it a gentle flick with the whip as directed, to expedite its movements.

The length of time required for the " Galvayning " of any particular horse depends upon the animal itself. Sometimes it is possible, after a few minutes only, to approach it and stroke it quietly with your hand without

causing fear or resentment, whereas in other cases it may take half an hour or longer to produce a similar result. Condition, as well as temperament, has a lot to do with this matter. Before commencing the operations care should be taken to see that the subject is in fair fettle. It ought not, however, to have a full stomach at the time.

When the animal has sufficiently settled down into a state of docility and obedience, procure a " third hand " (the nature of which is fully explained in the chapter headed " Explanations of Terms," etc.), and hold it so that it will come gently in contact with the horse's nose each time the animal turns round. Continue to hold it in that position until no fear or resentment is shown at it, when it is allowed to rest upon the colt's nose. Then commence to move the " third hand " gently up and down, until you can pass it quietly over the head and quickly on to the neck. This last action will probably be resented, and the colt will try to get away from the " hand," but as it cannot do this, it will commence to turn round and round more rapidly. Remain *still* until it has calmed down again, then approach it and commence to work as before. Keep the " hand " pointing above the horse's head, as close as possible without running the risk of striking it. As soon as the animal has stopped turning round, replace the " third hand " on its neck, speak to it soothingly, and rub it gently with the " third hand " all over its neck and fore end, then along the back as far as the croup, as gently as if you were using one of your own hands instead of the improvised wooden one. As soon as the animal ceases to resent this treatment in any way, handle its hind quarters, namely, below the tail, inside the flanks, on the legs (see Plate 9), along the belly, etc., and ultimately under its tail, continuing to work the " third hand " about slightly all the time, to let the animal be aware that it is still there. During all these operations it is imperative that you " keep your temper." If the animal should strike or kick the " third hand " away, you must not retaliate in any way ; simply replace it gently, but quickly, again and again on or adjacent to the particular spot from which it has been removed, until the colt ceases to kick it away. The " third hand " should be held in such a position that a kick will send it *away* from you, not in front of your body between yourself and the animal, or you may get hurt. The pole should be held firmly, and a stronger grip taken with the right hand at the moment it is struck, or, if the kick be a strong one, it may be knocked right out of your hands. In fact, I have

seen one kicked with sufficient violence to send it through the top of a marquee. But you will generally be able to retain your hold upon it if you take a stronger grip with the right hand at the moment of impact. The blow will then only swing it round away from you, probably out of the left but not the right hand. Do not be discouraged if the subject persists in kicking for a considerable time. Continue the treatment until it ceases to do so. The "kick" was *in* the animal, although it may have been dormant, and it is best to provoke it and then *eradicate* it finally in the above harmless manner, in the earliest stages of training.

During the above treatment you have been preparing the colt to take the harness, and the next proceeding is in continuation of the same preparatory training. When the animal can be touched anywhere with the "third hand" without causing it to flinch, procure an empty corn sack, fix it upon the end of the "hand" by thrusting the pole into it, and proceed as in the first instance, when using the pole only. Induce the animal to place its nose on the sack, then move the latter up and down a little, slowly and near to the face, ultimately raising and passing it over the head, and letting it fall gently on the back, just where the saddle should come. It may at first resent this, and kick or try to run away. But its efforts to escape will be quite futile. Whilst it is turning round hold the "third hand"—the empty sack being still suspended from it—in such a manner that the sack will come into contact with the animal's head every time it turns. It will soon become apparent to the colt that the (at first) terrible object which meets it at every turn is perfectly harmless, and its fear will quickly disappear. Continue to lift the pole up and down, slowly at first, then with increased speed, causing the sack to touch the animal at all parts; pass it down the quarters, and bring it against the hocks, quietly at first, then with a firmer pressure. If the colt kicks and removes the pole from any particular spot, replace it there or thereabouts until no alarm or resentment is shown. The "third hand" may now be dropped, and the sack taken off, to be used in conjunction with a second sack. Take one sack in each hand, and flap them both gently all about the animal's legs, head, and body, on both sides. Throw them on its legs, first quietly, then with more force, but always taking care not to hurt it. Continue this until you could, if desired, throw a hundred sacks on and about it without causing the slightest alarm. This will constitute the termination of the first lesson in "gentling" or training, now known as "Galvayning."

I may say here that I believe the "Galvayne" position to be the only one in which it is possible to place a horse which allows it the necessary liberty to *show* its vice at any period of its training, yet at the same time so restricts its movements that it is impossible for it to get away from you. It enables you to teach and tame the animal in perfect security, both to it and yourself. If it fights—let it fight. It will rapidly subdue itself, and soon discover that it is perfectly useless to rebel. If it tries to rush you it cannot do so, as it is compelled to go in an opposite direction to the one in which it desires to go, whilst you, of course, move the other way. If it strikes or kicks, it merely hits the "third hand," not your own. The constant replacing of that which provokes the kick gradually makes it realize, first, that it is not in its power to evade the object which is so annoying in the first place, and, secondly, that the object itself is perfectly harmless after all. The empty sacks flapping and falling all about it, and on it, prepare it to take harness, and also to see and feel a rider on its back. In fact, during the process of "Galvayning," etc., you have not been merely training and gentling it, but you have also been educating its most important senses—seeing, hearing, and feeling. The senses of sight and hearing require further training, of course, and the "Galvayning" position is the best and safest for the purpose, particularly in the case of a nervous and excitable horse which it is desired to train to strange and terrifying noises and objects, such, for example, as a traction engine or motor-cars. But I will devote a separate chapter to this subject.

MEM.—When "Galvayning," keep the animal circling round the enclosure in *one* direction only during the whole of the time. To ensure this, you should place yourself in a position about the length of your whip from the moving animal, and nearly the same distance from the fence or ring ropes, remaining in the same relative position as nearly as possible throughout the proceedings. If the horse is too close to the ropes, get it away from them, by going between them and the animal. If the animal be "Galvayned" on the "near" side, the trainer must work on the "off" side and give way (stepping backwards) when its head is coming towards him, and move forwards as its head leaves him ; by working on this system the horse can readily be moved in any direction.

THE MANIPULATION OF THE LONG REINS IN THE RING

AS " Galvayning " is the keystone of my system of taming and " gentling," so is the scientific manipulation of the " long reins " in the ring the keystone of my system of *training*—the real object of which is the inculcation of the habit of prompt and absolute obedience to the bit and reins. My experience has taught me that the only method by which this can be accomplished is by the scientific handling of the long reins.

I am not ignorant of the fact that two long reins of a kind have been used for a number of years in training operations, but the scientific and correct method of using them was not practised or known until I introduced it in Australia, and subsequently into this country. It is impossible to emphasize too strongly the value of the long-reins treatment. It is the most potent factor in training generally, and the most efficacious in the prevention and treatment of the many kinds of " bad mouthing," which may be rightly said to be, as far as horse vices are concerned, *the root of all evil.* " Bad mouthing " is solely responsible for the production of confirmed " bolters "—horses that, under the influence of the least excitement, become uncontrollable. It is also largely responsible for " jibbers," which invariably decline to obey the rein (in consequence of bad mouthing) before refusing to pull. Again, in the case of those horses which kick only when brought abruptly to a dead stop, while being driven at a smart trot in a vehicle, and of those which only kick if suddenly stopped with the reins in the ring during the process of training, the habit of kicking is also frequently attributable to incomplete and bad mouthing. It is the animal's method of expressing its resentment of a forcible and unusual operation of the bit.

Now, inoperative and bad mouthing is, in the great majority of cases, the direct result of the old system of training the colt to obey the bit. Many of my readers have doubtless observed this system in operation. It consists of attaching two separate ropes to the bit, one on each side, and, as a rule,

allowing some ignorant (ignorant, i.e., of colt breaking) yokel to parade the animal along a country road. From time to time the said yokel spasmodically jerks and drags at the horse's mouth in the most senseless manner, now and again varying these proceedings by striking the animal with a swinging action of one of the ropes as violently as possible on its quarters, following this act by hanging with his whole weight on to both the ropes, thus compelling the horse to pull him along with the bit. I have myself observed this idiotic process in operation on many occasions, when driving about the country. Is it possible to conceive of a more effective and drastic method of utterly *destroying* the sensitiveness of the animal's mouth, and of thereby rendering it completely callous and impervious to any ordinary pressure of the bit? Surely it is not necessary to say more in condemnation of this preposterous system.

On the other hand, the long-reins treatment is specially adapted to *develop*, instead of destroying, the natural sensitiveness of the bars of the mouth. It enables the pressure of the bit to be modulated to the nicest possible extent. Moreover, it ensures a perfectly even pressure on both sides of the mouth, thus preventing "one-sidedness," and gives the driver absolute control over the horse at all times and under all circumstances. Another advantage of the long-reins system is that it enables the training to be effected within the circumscribed area of a ring, or other suitable enclosure, and, if desired, under the immediate supervision of the owner, whereas one of the chief recommendations (or the reverse) of the old system is that it affords, to the yokel in charge of the "training" operations, ample opportunities for attempts to satisfy his unquenchable thirst at the wayside inns.

I have said enough to indicate the importance of mastering the use of the long reins to all who desire to become experts in the scientific treatment and training of colts and horses. The process of learning the use of them is by no means tedious or laborious. A few days should suffice to acquire dexterity, and the time will be exceedingly well-spent. It is advisable to commence by practising with a made horse, of a not too sensitive or excitable disposition. With these preliminary observations I will now proceed to describe the process in detail.

For convenience sake, and to facilitate explanation, I have referred, and shall continue to refer, to the "reins," but, as a matter of fact, it is *one* long rein only which is used. It should be a continuous leather one, from

40 to 45 feet in length, about $1\frac{1}{8}$ inches broad, and stouter towards the parts adjacent to the mouth of the animal. The centre portion of the rein, to the extent of about 15 feet, should be of a slightly lighter and softer leather, but not so thin as to double up and become cord-like when being handled by the manipulator. It is necessary that it should always remain *flat*, so as to facilitate its running through the fingers when the horse is being turned. There should be no buckle in the hand part, for a similar reason, and to prevent injury to the hands of the driver.

Commence operations by putting the surcingle and long rein on a "made" horse. After leaving the latter's mouth the reins must be passed through the lowest rings on the surcingle, one on each side, to your hand. I may here mention that the lowest rings on the surcingle should be about on a line with the elbow. Take the reins in your left hand, passing the left rein through the hand, or rather across it, from left to right, and the right rein from right to left. This is the "Colonial" or "Yankee" style of holding reins, and is undoubtedly the best to adopt for ring work.

You will now take up your position near the centre of the ring, and parallel with the horse, i.e. facing its side. The inside rein will now be in a direct line to you from the ring in the surcingle, at right angles from the horse's head, whilst the outside rein will pass along the animal's farther side and round its quarters—just above the hocks—to your hand, as shown in Plate No. 20. Start the animal at a quiet walk and let it complete the circuit of the ring, yourself always occupying the centre of the ring and moving round gradually with the horse, so as to be always parallel with it and facing its side. When the circuit of the ring is completed, give the command "Right turn!" assuming the horse to have been sent to the left at the start, simultaneously putting your right leg well forward, planting your heel well into the ground, holding the right rein firmly, and pulling the animal round, allowing the left rein to slip through the hand. Directly the horse has turned sufficiently, close the left hand tightly on the rein, to prevent the animal from turning in towards the centre of the ring; re-grasp both reins firmly, taking hold of them with the right hand—the left hand holding the left rein at a distance of about a foot from the right hand—and, when about to turn the horse to the left, run the left hand to the same position as it occupied before the turn; give the command, "Left turn!" throw out the left leg, planting the heel well into the ground, and taking a firm hold of the

rein ; pull the horse round, allowing the right rein to slip through the hand until it has turned " left about," then re-grasp the rein firmly with the right hand to prevent the horse from turning in too far, and again take hold of both reins with the left hand, the right hand being on (but not grasping) the right rein about twelve inches from the left hand. Continue this exercise, first at a walk and then at a trot, turning the horse after every complete circuit of the ring, until you can manipulate the reins with adroitness and ease.

If the animal you are training to the " long reins " (after your preliminary practice with the " made " horse) be a colt or a hard-mouthed horse, you must gently flick its inside shoulder (the one always next to you) with your whip when first teaching it to turn (a long, light, drop-thong whip is the best to use in the long-reins treatment). In the case of a colt always use a bar-snaffle—the bar eases the mouth and prevents injury. For the hard-mouthed horse use a four-ring jointed snaffle.

When " whoaing " to stop the colt, do not be afraid to speak too loudly. Let the command be made with decision, and impress upon the animal that you mean to be obeyed by first slackening the reins somewhat and then standing still abruptly yourself, allowing it to " go on to the bit " simultaneously with your ejaculation of " Whoa ! " Do not pull back at all—simply keep your arms slightly bent and rigid—being careful to grasp the reins *tightly* at the right moment. If the animal at first refuses to stop, repeat the exercise until it *will* do so. Less than a dozen " stops " will generally accomplish this so effectually that it will stop immediately, even at a whispered " Whoa ! "

To teach the animal to " back," let your assistant take the reins, and stand behind, whilst you go to its head. When you are both in position, and ready, say " Back ! " your assistant making a strong, steady (but not violent or jerky) pull at the reins, while you simultaneously put your left hand on the animal's nose, but not in such a manner as to interfere with its breathing. If it should be stubborn, put your right hand as well on its near shoulder, giving it a backward push with your left hand and a sideways push with your right, simultaneously with your ejaculation of " Back ! " Never make, or allow, the colt to run backwards indefinitely, or it will be very liable to develop a tendency to run backwards every time it is stopped —a very awkward habit, and one that is sometimes troublesome to cure.

Simply make it go back two or three steps at a time, and stop directly the pressure on the rein is relieved. It must also be taught not only to *stop* when ordered, but to remain perfectly still upon the very place indicated. No fidgeting about or turning a little to one side or the other must be tolerated. Should it show any tendency in this direction, it must be promptly "straightened up" with the whip and reins, and compelled to return to the spot where the command to "Whoa!" was first given. The reins must not, however, be used for *flapping* purposes. Only two "Whoas!" should be given, namely, the one it did *not* obey, and the one it was *made* to obey. I strongly advocate that all animals should be trained in the ring *without* winkers, in the first place. The use of open bridles facilitates the training in every way, both for the man and the horse.

When dealing with a specially difficult subject—one, for example, that has acquired any objectionable habits with its head, such as shaking it violently, boring, etc.—it is advisable, after passing the reins through the lower rings of the surcingle, to pass them through the outer rings of the bit (in such cases a four-ringed, stout-jointed snaffle should be used), and buckle the rein to the upper side ring of the surcingle. This affords a stronger leverage-pull upon the mouth, and tends to prevent the animal from throwing up its head. A still greater power can be obtained if the reins be used in the manner described in conjunction with the "overhead" check. My opinion is that if the long-reins treatment were adopted with "green" polo ponies, much better and quicker results would be obtained than by any process of saddle-training only. The polo pony has to learn to stop, start promptly turn quickly, and not to "shy off" the stick, etc., and this can be better accomplished by means of the long-reins and "third hand" treatment in a suitable enclosure than by any other method.

It may sometimes be considered necessary, in the case of confirmed rearers, or particularly stubborn animals, to "throw" them, and the only *safe* way to throw them is *sideways*. The prevalent practice of pulling them over *backwards* with both reins is a stupid and dangerous one; in fact, one that involves the serious possibility of killing the animal. I have myself seen valuable horses killed in this way, on more than one occasion. Causing them to fall sideways can be accomplished with ease and safety by the expert user of the "long reins." The process is as follows: When the animal is in the act of rearing (assuming it to be a rearer) pull its head round towards the

surcingle, and retain it in that position, using one rein only—say the right-hand side one. This forces the horse into such a position that it loses its equilibrium and is unable to plant its fore feet evenly and strongly on the ground, which it is only able to touch momentarily with them. It is compelled to assume a nearly sitting posture, and a further strong pull with the same rein will make it lie down quietly on its near side. It will be unable to rise if the right rein be kept quite taut. When it is down, approach it hand over hand along the right rein, disregarding any attempt it may make to get up, and administer a few sharp cuts below the hocks and knees with a light, switch American buggy whip. Do this without fuss or noise, then allow the horse to rise, and continue its training as before. When you have succeeded in making it perform satisfactorily with the long reins while at a gallop, executing everything you require it to do promptly and perfectly, without exhibiting any inclination to rear, etc., you may proceed with its training from the saddle.

Before leaving this subject I must refer to the training the animal's sense of sight should receive during the process of "mouthing." The object of the trainer must be, not to make the horse *afraid* of the whip, but simply to regard it as something to be obeyed. In ring training the whip should be always held erect at the word "Whoa!" should be turned to the right at "Right turn!" and to the left at "Left turn!" By the process of association of ideas the animal rapidly comes to connect the direction in which the whip is held, etc., with the action it is required to make. A drop-thong whip should be used at first, as it is better adapted for cracking purposes. When the horse has been taught to stand still at the word of command, test the thoroughness with which it has learnt its lessons by judiciously cracking your whip, commencing a short distance away and gradually getting nearer, approaching and retiring alternately, and cracking your whip the whole time. If it moves from its position, pull it back again and again if necessary, "straightening it up" each time and compelling it to return to its original place. Finally, walk all round and about it, continuously cracking your whip, and in a little while it will remain perfectly quiescent.

The sense of hearing also undergoes a certain amount of training during the whole course of the driving lessons in the ring, materially assisting the trainer in his future operations. As time goes on, the "Whoa!" need not be given so loudly, but it must always be given smartly. When the animal is

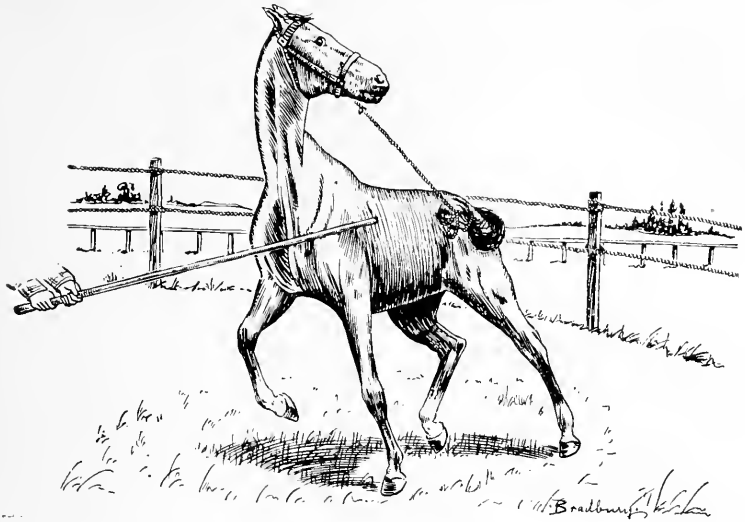

PLATE 10.—A VICIOUS HORSE, WHEN IN THE "GALVAYNE" POSITION, TRYING TO ATTACK THE TRAINER.

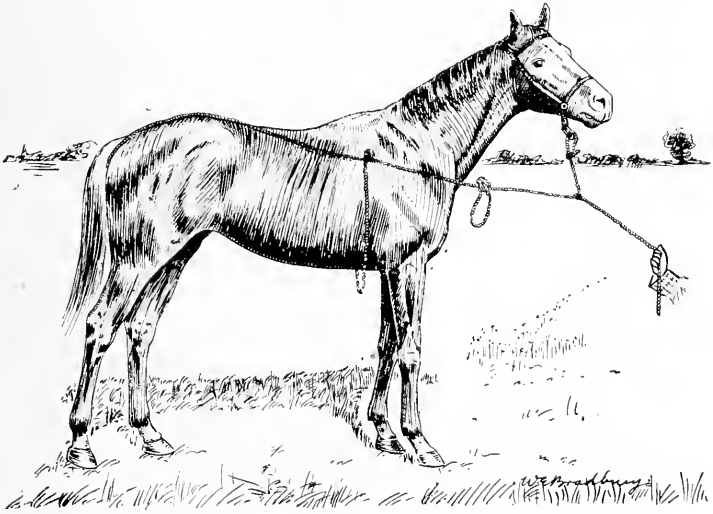

PLATE 11.—A COLT BEING TAUGHT TO LEAD BY THE AUTHOR'S METHOD.

perfectly trained to obey the bit, words of command may be discontinued, with the exception of the word "Steady!" indicating that the horse is to *remain still*. This is entirely distinct in meaning from the word "Stop!" and its use must be continued for a longer period. In fact, it may be used at any time in the future, when necessary to make the animal remain motionless. It should have the same signification to the trained horse as the word "Attention!" has to the drilled soldier, namely, that he is not to *move* until ordered to do so.

The value of treatment on the lines indicated above, if intelligently and carefully carried out, cannot be over-estimated, and will be apparent throughout the whole course of the training. But I must again remind the would-be trainer that a few days' preliminary practice in the ring with a quiet or "made" horse are essential before tackling the raw material. Otherwise, in place of properly "mouthing" and training the animal, the opposite result may possibly be attained. It is hardly practicable for anyone to train a horse and teach himself how to do it simultaneously.

No system of "mouthing" can be properly described as *efficient* unless it enables the driver or rider to retain absolute *control* over the animal when it is labouring under *excitement*. To test the thoroughness of your work, therefore, put the horse or colt into a state of considerable excitement by cracking your whip as loudly as possible, throwing an empty sack or two on its back unexpectedly, or doing anything, in fact, calculated to frighten it and cause it to bolt. If, under these conditions, you find that you can control it perfectly with the reins, you may rest satisfied with your efforts. It may just be noted here that bad-tempered animals invariably resent being made to "back," and a thoroughly good drilling with the long reins in the ring is absolutely essential for them.

CATCHING A COLT AND TEACHING IT TO LEAD

WE will suppose that the colt to be caught is an ordinary wild one, say a three-year-old running about in a field and never having been touched by a breaker. Take a quiet horse and lead it up to and near the colt, then turn and walk the former slowly away from it ; the colt will immediately show an inclination to follow. Have two lads with you—lads are better for this purpose than men, being more active and obedient, and less inclined to exceed their instructions—and instruct them to walk quietly behind the colt, a little to either side. Then lead the horse very slowly towards the stable. If the colt hesitates or stops, regulate your movements accordingly, and when it makes a fresh start, walk quietly forward again. See that the lads maintain their respective positions, as indicated above. Let there be *no shouting* or loud ejaculations of any kind. Should the colt show any inclination to break back, smartly, and as quietly as possible, face and stop it. Avoid anything calculated to frighten or irritate it, and you will then experience no difficulty in getting it to the box door. When there it will probably stretch out its head, lean forward to gaze into and scrutinize the interior of the box, tremble at the knees, and perhaps snort—exhibiting, in short, feelings of mixed fear and curiosity. In the meantime lead the quiet horse just inside the box (keeping its quarters near the door), so that the colt can see it and put its nose upon it. After allowing the colt a little time to gain confidence, lead the quiet horse very slowly forward into the interior of the box, and as the lads close in behind it the colt will, in all probability, give a snort and bound in also. It will then run round and round the quiet horse and hug it closely, pawing the ground and shaking its head up and down if very nervous. The quiet horse should now be led slowly out and the door shut, leaving the colt with a little cut grass, or hay and carrots, to assist in familiarizing it with the box and restoring its confidence. Its feeding, or not, is a sure criterion of its nervous condition. As soon as it feeds, you may, at your leisure, enter the box very quietly, taking a " third hand " with you. Keep the latter practically upright for a time, moving it about gently in such a manner that the

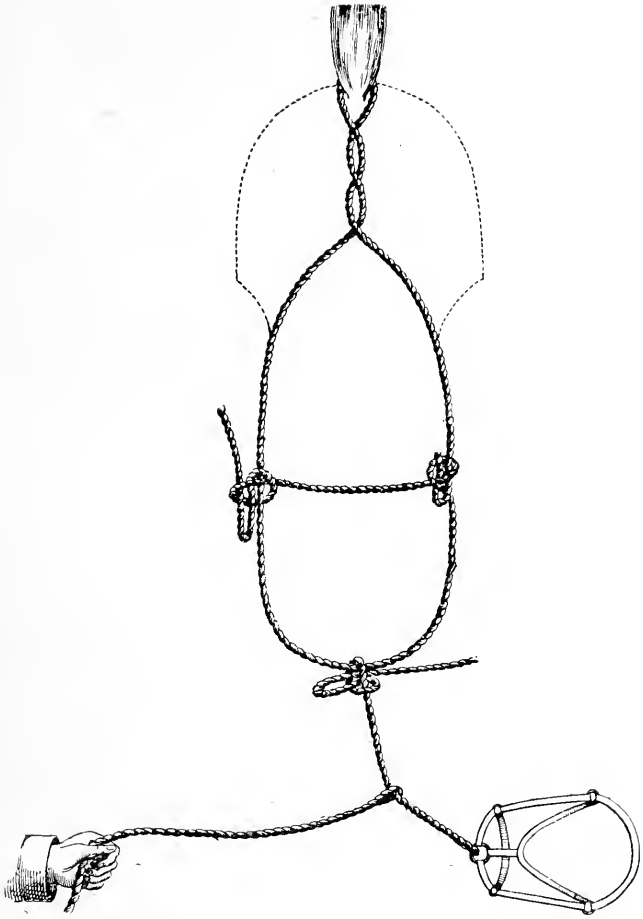

PLATE 12.—THE HAIR, OR LEADING ROPE, WHEN ADJUSTED.
Note.—The swinging rope is held in the hand.

colt can see it and become accustomed to its appearance, without being alarmed. After a time, hold the " hand " out in front of you, about four feet from the ground and in the direction of the colt's nose. This may alarm the animal somewhat at first, but if you keep cool and speak soothingly to it or whistle softly, it will soon regain confidence and ultimately will put its nose on the pole. When it does so, pass the " hand " quietly over its head (taking great care not to strike it), then pass it along its neck, withers and back as far as the loins. While doing this, the colt may show an inclination to kick ; but just continue to rub it gently and quietly all over the fore-end of the body with the " third hand," and it will ultimately settle into a state of perfect quietness and docility. Time, discretion, judgment and patience must all be exercised during the above operations, the main object of the training being to thoroughly gain the confidence of the animal at as early a stage as possible. The idea of using the " third hand " in the manner described is, not to *make* the colt kick by irritating and ill-using it, but to make it realize, by experience, that no matter how alarming your actions may appear they are perfectly harmless, and that you are really its friend. This humane treatment will soon lead the animal to recognize your presence with signs of pleasure, and subsequently to become your willing and obedient servant.

When the colt has arrived at the stage of submitting to be touched with the " third hand " about the head and neck, and rubbed gently on the nose with it, without showing resentment or alarm, approach it gradually, holding the " third hand " in your right hand and moving it gently up and down the animal's neck, and having the halter held out in your left hand. It is advisable to have a piece of bag tied round the end of the " third hand," with a portion of it hanging loose, so that the colt will not hurt itself should it become excited and strike its head against the pole. It is best to use a plain rope halter. The broad web poll and cheek pieces should be strongly made, with a shank ten feet long. Let the shank hang over your left shoulder, and have your halter arranged ready for use, having previously pulled the shank right through the cheek piece and made an ordinary tie-knot in it, about 6 or 7 inches from the off-side cheek (see Plate 6, Diagram 3). Then pass the end of the shank back again through the near-side loop, and allow it to hang down about 18 inches or 2 feet below the nose-band—forming a fairly large loop. Keep the " third hand " moving on the animal's neck, and continue to approach it quietly with your arm extended, until it puts its nose near your

hand. Move the halter up and down very slowly. When you can touch the colt's nose with your hand, gradually work the halter up its face, and slip it quickly and quietly—(let the third hand lean against the withers) with your right hand—*over* its ears. Immediately the poll piece is in its proper place, the shank loop will be pendulous under its jaw, and you can then pull the shank through gradually, or quickly if necessary. The tie-knot you have made will prevent the shank from cutting into the animal's jaw ; when you pull you do so on its *poll*, inclining it to *lower* its head, instead of causing it to throw its head upwards and learn to strike with its fore-feet, rear, etc. The throat-lash should then be quietly fixed and tied, to prevent the halter from slipping off the animal's head. The throat-lash is a piece of stout cord about 15 inches long, which must have been fixed to the halter previously. It should be fastened at the top of the off-side cheek, and a small loop, to which it can be attached, should be made in the top of the near side. As soon as the halter is on, take the " third hand " quietly away, pull the horse's head smartly and strongly to the near side, place your right hand on its quarters, and simultaneously give a strong push. Repeat this several times, then seize the animal's tail with your right hand, taking a short hold of the halter shank with your left, and give the colt a few smart turns round, afterwards calling in an assistant to hold the halter. The correct way to hold a colt by the halter, when standing on the near side, is to hold the shank close to the jaw with the left hand, and to have your right hand, with the end of the shank in it, placed on the animal's ribs. There should be a knot at the extremity of the shank, to prevent it from being drawn through the hand. If the colt struggles at all, the assistant must pull with his left hand and push with the right, thus turning the animal round and round.

I must here draw attention to a very common, and very dangerous, custom, namely, that of twisting the halter shank several times round the hand to prevent the colt from breaking away. Should the animal struggle violently enough to obtain mastery over the man—a very likely contingency —the latter will be unable to release his hand and will probably be dragged along the ground. The use of a knot at the end of the shank renders such an accident impossible, whilst it gives a better grip of the rope, and at the same time allows it to be dropped immediately if necessary.

The next thing is to take the looped end of the hair-rope (which should have been placed handy somewhere) in your left hand, double it so as to make

a sort of crupper (see Plates 11 and 12), the looped end being the short one. Holding the loop, and the portion of rope level with it, with your left hand, and having the rest of the rope thrown over your left shoulder, put your left hand gently upon the colt's back and divide the rope, allowing the so-made loop to fall down its quarters, forming a sort of breeching. Then lift its tail quietly with your right hand, at the same time pulling the rope with your left hand towards its withers, thereby bringing the loop into exactly the same position as a crupper, and GENTLY lower the tail. Twist the short end a time or two round the rope, pass the long end to the off-side and bring it round the chest to the near side. Pass the end through the loop, fasten off with a single hitch *on* the loop, throw the end of the rope quietly under the belly, go round to the off-side and finish off with two single hitches, leaving the belly-band loose (see Plate 11). Take the "Swinging Rope" (a strong piece of rope about 6 feet long, with a loop at one end), pass the shank through it, and then tie the shank in a half bow to the hair rope *in front of the chest.* When this is done lead the colt round and round the box a time or two, then take it outside, walk in front of it, and give it several smart, strong jerks—still continuing to walk on. The hair rope will nip its tail, and make it come forward immediately. This method is infinitely better in every way than the old one of endeavouring to drag it forward by the head alone, which chokes it more or less and causes it instinctively to struggle and hang back. My method, on the contrary, simply nips the tail end of the animal slightly, and thus creates a natural and instinctive tendency to come forward.

Under the old system of haltering for leading there is always the likelihood of the animal, when lying down or rising in the stable, putting a heavy strain upon the halter and thereby causing a choking sensation from which it will naturally struggle violently to release itself (a sequence to its early training). Under such circumstances the system herein advocated simply allows the rope to nip the tail, making the horse come forward instead of hanging back, and it is in the hanging back and fighting that the danger lies.

The above method is also to be recommended in the treatment of horses which have acquired the confirmed habit of hanging back in the stables, and breaking their halters. In fact, it has cured many noted halter and bridle breakers of the habit. It is also a useful auxiliary in the training of horses to steam, etc. (see Plate 29), as indicated in the chapter under that heading. The animal should be tied with the swinging rope to a fence or post alongside

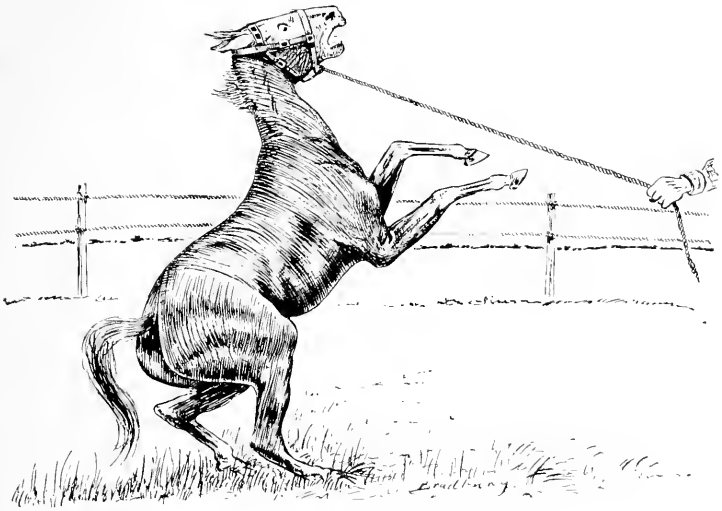

Plate 13.—A Colt being Taught to Lead under the Old System.

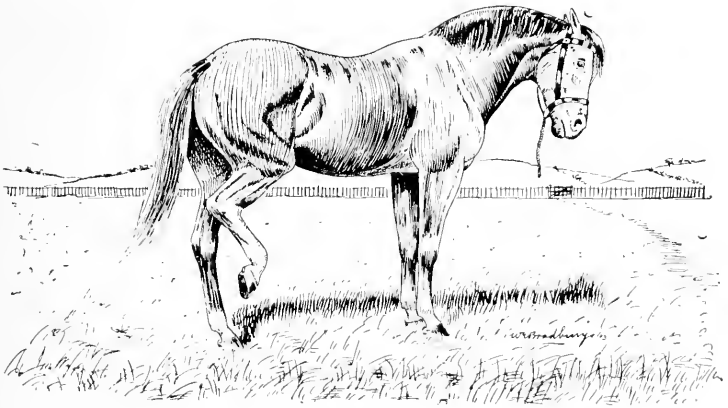

Plate 14.—Broken Loose, and Waiting to be Caught again.

a railway, exactly in the manner described above. Place near to it a box of corn or a net of hay, then wait a little distance off and watch results. You will observe the horse quietly feeding out of the box until the train suddenly puts in an appearance, when it will make a big bound backwards. Meeting, however, with something in its rear (the crupper portion of the rope), which slightly punishes it, it will make a similar bound forward, and then remain almost still. The succeeding train may cause it to fidget slightly, but its previous experience will deter it from attempting to fly back and bolt, although it may perhaps pull back more or less strongly. After the second pull back, *in all cases, whether colts or horses, without exception*, cover the crupper part with a soft cloth or leather.

As an instance, out of many hundreds I might quote if necessary, of the effectiveness of this treatment, I may mention the case of a cob for which a Falkirk gentleman gave seventy-five guineas. It turned out, owing to its excessive nervousness and fear of railway trains, most dangerous to use. On two occasions it had bolted and smashed the vehicle to which it was attached, through fright at locomotives. The owner, in consequence of these dangerous proclivities, disposed of it to an omnibus proprietor for £17. The latter harnessed it to a bus, alongside a strong, steady horse, but on the approach of a train it struggled violently in its efforts to escape, and finally, finding this impossible, lay down on the ground, trembling with fear. I took the cob in hand, and after two days of the above treatment succeeded in rendering it so fearless of trains that it would eat out of a box fixed on the station fence, whilst a shunting-engine was purposely run up and down in front of it, the steam being continuously blown off. During the whole of this very severe test the animal never ceased eating.

On another occasion an old mare, that would never lead or "tie up," was brought to me, and after a few minutes of the above treatment I made her follow me through the public streets without any other halter than a piece of string. I have also succeeded, in less than fifteen minutes, in teaching a four-year-old colt to lead that had previously defied all efforts to make it do so as a yearling, and again at the ages of two and three years respectively. This occurred at Driffield, Yorkshire, and the breaking to harness was afterwards effected in one lesson only.

THE "GALVAYNE" SYSTEM OF "GENTLING" AND "MOUNTING" A COLT

GENERALLY speaking, it is advisable that this portion of the training be done before teaching the colt to lead, unless the animal is quiet enough to allow the breaking tackle to be put on, in which case there is no reason why the leading should not be done first. In fact, under certain circumstances, such as when it is necessary to catch a colt in one place and break it in another some distance away, the latter is the better course to adopt.

Directly the halter is on (supposing the colt to have been haltered in the ring) take a firm hold of the "Galvayne" strap, close to the animal's head, with the left hand, and pull it towards you, at the same time seizing the tail with the right hand. Then swing the colt smartly round and round you as many times as you can stand it yourself without becoming dizzy, but until the colt *has* become so. Then tie a single knot in its tail (see Plate 7, Diagram 10), hold the end in the left hand along with the end of the "Galvayne" strap; pull the knot downwards with the right hand until it ceases to slip, divide the hair above the knot and pass the end of the "Galvayne" strap through the division; then tie in a single bow knot (see Diagram 6). Now pull the animal's head round to an angle of about 35 degrees, bringing its head towards its tail on the near side, as shown in Plates 8 and 9. Satisfy yourself that the angle to which the head is brought is the correct one for the requirements of the case. With a nervous or excitable colt do not pull the "Galvayne" strap so tightly as in the case of a sullen one. It is best to let a nervous animal calm down before working upon it; a sullen one should not be left alone so long, or it will probably drop down a time or two. No injury is likely to result if it does, as it does not *throw* itself down with violence; if the head is tied on the "near" side, the horse generally falls on to the "off" side. The head being in the position it is, is prevented from coming in contact with the ground; the body being curved also renders a violent impact impossible. Nevertheless, I always endeavour to prevent it, as it can do no good in any way.

Once you have succeeded in getting the animal into the "Galvayning" position it is entirely at your mercy and cannot get away from you, being only

capable of moving in very circumscribed circles. It may squeal with rage, kick, rear and possibly make frantic efforts to chase you out of the ring, but all its violence will be abortive, and you will easily evade its onslaughts.

It is now advisable to stand back a little and leave the animal alone for a few minutes. As a rule, five to ten minutes is quite long enough to leave it before commencing to work upon it, although I have, in exceptional and extremely difficult cases, had to leave the colt in the "Galvayning" position for nearly an hour—loosening its head occasionally, to let it have a "blow"—before commencing active operations.

When the animal's excitement has subsided, take a light drop-thong whip and give it its first lesson in *obedience*—the fundamental basis of all training—by teaching it to move when ordered to do so. Touch it lightly with the whip on the *outside* forearm, i.e. the forearm on the opposite side to that to which its head is turned, and make the "clicking" noise generally used by drivers when desiring to start a horse. You must not *strike* the animal—merely waving the whip, causing the end of the thong to touch it; the motion and direction of the whip in themselves instigate it to move away from you. The "click" should be instantly followed by the command "Get up!"—given smartly and loudly. The fact that the colt can only move in a circle is of no consequence; the main thing is to teach it to move when told to do so in the particular manner described. This portion of the training may tax your patience in the case of stubborn colts, but nevertheless you must keep your temper and abstain from any severe use of the whip, which is simply intended to serve as a medium for conveying your instructions. When the animal responds willingly to the command "Get up!" try it with the "click" alone, without using the whip at all, and as soon as it moves promptly at the sound of the voice or "click" only, it will have learned its first lesson in obedience, and an important stage in its training will have been concluded.

The next step is to eradicate the natural instinct to kick, which the horse displays whenever it is touched behind, and to do this effectually you must proceed as follows. Take a "third hand," approach the animal while still in the "Galvayning" position, and hold it in such a manner that the colt will be compelled to touch it with its nose, either when standing still or when turning away from it. Then pass the pole quietly over its head, down its neck and along its back, gently and leisurely down its quarters close to the

hocks, and finally along the belly and down the front legs, etc. At least half an hour should be spent over this portion of the training (see "Art of Galvayning"). The colt will be sure to become more or less excited during the proceedings and possibly kick at the " third hand." It may also attempt to run away, but this will be impossible. It can only move round and round, which becomes extremely monotonous, futile and fatiguing, especially when it finds that the " third hand " is always coming into contact with it at some stage in each of its revolutions. This treatment should be continued until all fear of the " third hand " has vanished (for " third-handing " see Plates 9 and 10).

The next item in the training is to take an empty sack and push the end of the " third hand " into one of its corners, the sack then resembling a flag on a pole. Hold it towards the animal and touch its nose with it, then pass it over the colt's head slowly, down its neck and on its back ; flap it about the back and legs, and then, after a time, withdraw the " third hand," leaving the empty sack on the colt's back near the withers. Procure another sack, and put it on the " third hand " as before ; work it about for a time, then throw it also on the animal's back from the " Galvayning " side, i.e. the tied side. During this handling the colt may plunge occasionally through fear, but it cannot injure itself. I maintain that it is an absolute impossibility for a horse to sustain any injury whilst in the " Galvayning " position, always provided that the training be not practised in a confined or walled enclosure, or on hard, unsuitable ground.

When you have succeeded in getting both sacks on the animal's back as described, put still another sack on the " third hand," and gently touch the colt all over with it also, swinging it lightly against its head, ears, quarters and legs ; bring it up suddenly behind it, gently at first, against its quarters, and subsequently bumping them with it. If the colt kicks it away, put it back in the same place again and again, gently at first, then with a little force, until no inclination to kick is shown. Then drop the " third hand," take one of the sacks and rub the colt with it very gently, first over its face, then over its body ; pass your hand down its face, stroke it over the eyes, " gentle " it and wipe off the sweat. You may now give it a piece of chopped carrot, a piece of sugar, or anything it will eat. While doing this it is best not to entirely loose the " Galvayne " strap, but it may be lengthened somewhat if necessary. After the colt has finished eating, take the sack in your right hand, make a few swinging motions with it, and toss it on its back,

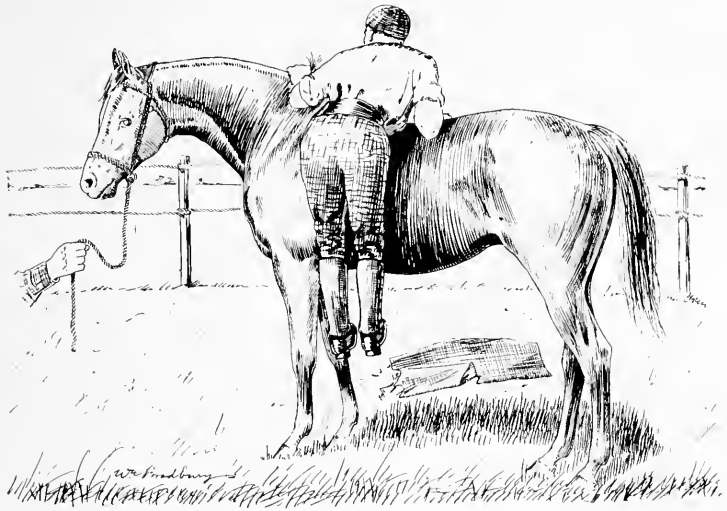

PLATE 15.—THE CORRECT POSITION WHEN MOUNTING A COLT.

Note.—If mounting on the off side, the right hand grasps the mane, and the other movements are also reversed.

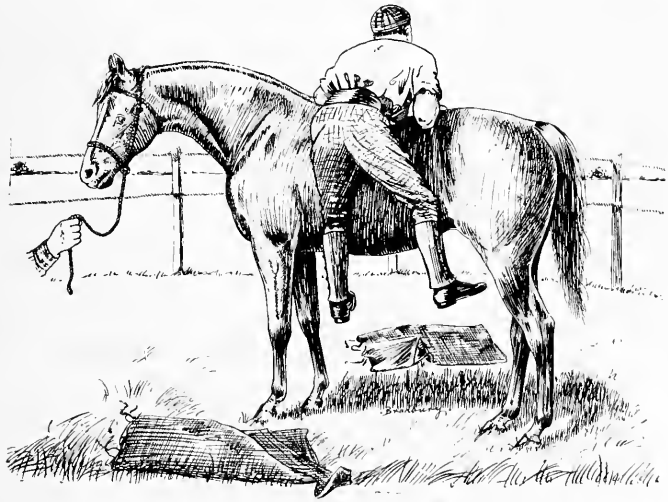

PLATE 16.—THE INCORRECT POSITION WHEN MOUNTING A COLT.

Note.—It must be understood that the assistant is standing by the shoulder of the colt taking a short hold of the halter with his left, and placing his right against the shoulder having hold of the end of the halter.

just where the saddle is placed. Continue to throw this and the other sacks all over and against the colt—except its face—roughly, until it exhibits no resentment or alarm ; then go round to the off-side, and take firm hold of its mane with the right hand ; put your left hand over its wither, the remainder of your arm, as far as the elbow, resting on its back. Lean upon your left elbow, pull the mane with your right hand until you are in a leaning position upon the colt's back, then draw yourself quietly off the ground, thus bringing your weight to bear upon the animal for the first time (see Plates 15 and 16a). The preliminary practice with the empty sacks will already have accustomed it to *see* objects on its back, and you have now to familiarize it with the sustaining of a *weight*. Under the unaccustomed pressure it may turn round a time or two, but maintain a tight grip of its mane and remain quietly where you are. You will be perfectly safe, and as soon as the colt is calm and motionless lift yourself on to your hands, and throw your left leg neatly over its back, at the same time withdrawing the "Galvayne" strap out of the tail or tail-cord ; turn the animal once or twice by pulling its head round, and at the same time gently tap it on the outside elbow with the side of your foot. The turning round tends to distract its attention somewhat from the unusual weight upon its back. Allow it to stand still for a short time, petting it and making much of it in the meantime ; but avoid fidgeting about on its back while doing so. After a few minutes' rest give the colt another sharp turn round, then let it stand still and pet it again. Afterwards let your assistant lead it straight away for a few steps—then round about for a few minutes, again stopping and repeating the petting.

The next step is to accustom the colt to *see* a real man mounting and dismounting, and moving about on its back. Commence by throwing your right leg over as if to dismount, but do *not* actually alight upon the ground ; simply allow your body to lean against that of the colt, supporting yourself upon your hands and arms, as shown in Plates 15 and 16a. Raise yourself by straightening your arms, throw your right leg smartly over its back again, and you will be astride once more. Now repeat this partial mounting and dismounting on the *off* side, and keep on with the exercise—taking each side alternately—as long as you may consider necessary. Finally dismount entirely, by *sliding* down quietly—first on one side and then on the other—to the ground, keeping as close to the body of the colt as possible until you are on *terra firma*.

The correct way to mount from the ground is to grasp the mane firmly with one hand—the left hand if mounting from the near side, and *vice versa* —and the wither with the other ; then spring up on them until your body is nearly in an erect position on your hands, and smartly and cleanly throw your leg (the right one if mounting from the near side, of course) over the animal's back. Practise this complete mounting and dismounting from both sides as frequently as may be necessary to thoroughly familiarize the colt with the proceedings. It is best to practise on a quiet horse at first, and anyone should be able, by carefully following the above instructions, to acquire the art of mounting and dismounting with neatness, precision and safety, within a very short space of time.

After finally dismounting, give the colt a rub down with a cloth and dandy, and another spell of fondling and petting. Then, either tie it up with the hair rope on, and after the *first pull back* wrap the part that goes under the tail thickly with a chamois leather (see Plate 11), or else put on the surcingle and crupper, and give the colt water and food. The animal will be in need of refreshment by this time, as it will have undergone a considerable amount of unusual exertion. Never, under any circumstances, overtax its strength, or you may convert a good-tempered animal into a bad and sullen one, and make a naturally bad one a great deal worse.

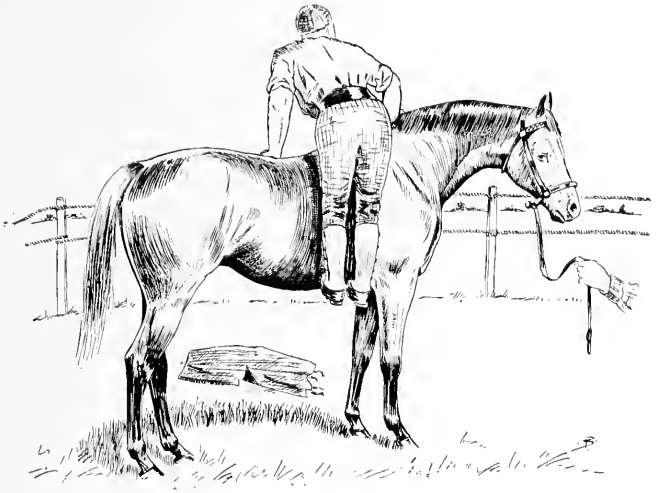

PLATE 16A.—THE SECOND POSITION WHEN MOUNTING A COLT, EITHER ON NEAR OR OFF SIDE.

PLATE 16B.—THE COLT MOUNTED.

Face page 56.]

BITTING A COLT THE FIRST TIME

BEFORE describing the best method of doing this, a few preliminary hints as to the *kinds* of bit to use will not be out of place; in fact, this aspect of the question is one of very great importance. There are many varieties of suitable bits to be obtained nowadays, and almost every breaker has some particular fancy of his own. Under no circumstances should the bit be a *thin* one—one that can cut and lacerate the animal's mouth and lips. Personally, my experience has led me to prefer a *stout-jointed bar-snaffle*, either with or without keys, and it is this description of bit that I have advocated and almost invariably used, both here and in the Colonies, as being the one best adapted to meet all contingencies. For some colts a stoutish half-moon snaffle with keys may possibly be preferable, and for others a straight sliding-bar snaffle; but for all-round utility there is not, in my opinion, any bit to equal in merit the stout-jointed bar snaffle.

The bit should be fastened well up on the bars of the mouth at first, to make it as difficult as possible for the colt to acquire the habit of putting its tongue over it. When the colt shows no desire to do this, lower the bit gradually from time to time until it lies across the bars, just *above* the tushes. In this position there will be less likelihood of the bars becoming sore, and the process of mouthing will be greatly simplified. Care should be taken that the bit is of the correct width, so that when working the colt with long reins it will not be possible to drag the bit through and through the mouth from side to side. The reason I so strongly advocate the use of side bar-bits is that the bars protect the mouth from injury, and also greatly assist the colt when it is learning to turn. They should be covered with a piece of wash-leather, or a round piece of stout harness-leather, 3 to 4 inches in diameter, should be fastened inside each side-bar. Either of these devices tends to protect the lips of the animal.

Now as regards the best method of putting the bit in the colt's mouth for the first time. It is rather a delicate operation, and I have frequently seen it greatly bungled—as doubtless has the reader also. There are many

bad styles in which it is, and can be, done, but there is no need to describe them. The method I adopt, and which I have found to be the quickest and best, is as follows. When you have fixed the leather head-collar on the colt shorten the poll-strap on each side. This will bring the cheek rings into the proper place. Attach a double-spring S hook to each, fastening the bit to the off-side hook first. Retain hold of the bit with the left hand, standing all the time on the *near side* of the animal—not in front of it. Pull the bit (with the left hand) first underneath, then upwards towards the mouth, at the same time slipping the fingers of your right hand into the colt's mouth from the near side, thus causing it to open. Then quickly seize the near side of the bit with the right hand (without entirely withdrawing your fingers from the animal's mouth) and hold the bit and cheek-strap together. Snap the hook with your left hand, and the colt is bitted. After a moment or two look carefully to see that the head-collar fits properly, and that the bit is neither too high nor too low. Test the fitting of the head-collar by pulling or slightly jerking it. At first, the proper place for the bit is the upper part of the bars of the mouth.

It is really a most difficult matter to explain adequately in detail the correct way of effecting this first bitting neatly and quickly. It is one of those things which require a little practical demonstration. But if the instructions above given be carried out carefully and intelligently on an old horse at first, there is no reason why the learner should experience any great difficulty in bitting a colt ; and a little practice will render the process quite easy. It is important that the bitting of a colt be done neatly and well the first time, or it will look upon the performance with a certain amount of suspicion and be difficult to bit subsequently. I may say that during the five years of my public exhibitions in Great Britain I must have " bitted " and handled some 5,000 animals (averaging about 20 per week), and I never experienced any great difficulty over the former process. It may readily be taken for granted, moreover, that some of the specimens of the equine race that came under my treatment were by no means of the most amiable description. In fact, many of them were specially reserved for me on account of their dangerous propensities, some being even " fed up " especially for the occasion. Frequently they were " mistouched " ones—colts that had acquired bad tricks or vicious habits through having been spoiled in the initial steps of breaking.

MOUTHING AND BENDING

IT will have been observed by the reader that the underlying principle of my system of training and breaking is the substitution of patience and kindness for severity of any description ; and in no section of the training is the exercise of the former qualities so absolutely imperative as in the " mouthing " of the colt. The process is in itself necessarily tedious and trying to the animal, and it is the trainer's duty, as well as being to his interest, to make it as easy as possible. Hitherto the colt has had perfect freedom and control over the movements of its head, neck and jaws. All at once its head is put into what may be termed a straight-jacket, compelling it to be carried at one particular angle. Many who practise colt-breaking attach so little importance to this, and exhibit so little understanding of the painful constraint to which the animal is subjected, that it would do no great harm if they were compelled to have their own heads secured in a similar manner for even, say, half an hour. The result would be an interesting assortment of muscle aches and pains, combined with a vivid realization of what the animal's feelings must be under similar circumstances. They would no longer be surprised that the colt shows its irritation by pawing the ground, rearing and striking at its mouth with its forefeet in its frantic but futile endeavours to remove the source of its irritation. One of the first things, therefore, to be impressed on the trainer at this stage of the training is the advisability of avoiding *long* lessons during the process of mouthing.

I am strongly opposed to the use of fixed or " hard and fast " reins to connect the bit to the surcingle, and also to the habit of putting the colt on " pillar " reins. I have frequently known capped hocks to result from the violent kicking of the colt, caused solely by being kept on them so long.

The great object of correct mouthing is to *preserve*, instead of diminishing, the natural sensitiveness of the bars of the animal's mouth, and for this reason the question of the kind of bit to use is one of the greatest importance. Any kind of bit may slightly excoriate the lips of the colt and the bars of the mouth, but an unsuitable one will produce deep sores and pronounced bruises, rendering this portion of the animal's training unnecessarily painful, and also " spoiling " its mouth instead of " making " it. The inevitable result of re-

peated *sores*—real sores, not the slight abrasions that we must always expect on the bars of the mouth—is that they become callous and non-sensitive in precisely those parts where acute sensitiveness is most essential in order to train the colt to be amenable and obedient to the slightest action of the bit. The use of a heavy, ponderous bit is also a sure method of ruining the mouth of the animal.

The bit used should be stout, without being heavy or cumbersome. I can recommend any of the following kinds :—a jointed bar-snaffle, a sliding bar-snaffle (with the mouthpiece slightly ported), or a half-moon bit. There is nothing to urge against the use of keys attached to the mouthpiece of any of these bits, provided that they do not hang so low as to fall between the incisors. On the other hand, there is much to be said in favour of properly-constructed key-bits for some animals, especially for those which persist in keeping a dry mouth, sulkily refusing to champ the bit, and " froth." In such cases the keys are of great assistance in the work of " mouthing," and the smearing of the keys and mouthpiece with treacle or honey adds to their utility. The mouthpiece may either be jointed, or what is known as a " half moon " with a sliding bar. The latter must not be thin, neither must it be so thick as to justify its being called " heavy."

As regards reins—I may say at once that I strongly condemn both *fixed* and *elastic* reins, and advocate the use of *running* ones in their place. The former are directly responsible for the habit of leaning on one particular side of the bit, a habit which renders that side of the mouth harder and consequently less sensitive than the other, and thereby produces horses with " one-sided " mouths. Any one who has had much to do with partially or imperfectly broken animals knows how difficult it is to drive a horse afflicted with this defect, and how extremely trying it is to the temper of the driver. The constant habit of leaning with one side of the mouth upon the fixed reins renders the bars on that side quite callous, and enables the animal to jerk against the rider with such force as frequently to snatch the reins through his hand. I deprecate the use of rubber reins, or reins with any kind of springs in them, because in my opinion they create " boring " horses, i.e. horses that thrust their noses forward and drop their heads at the same time, in order to relieve themselves from any lengthened and severe strain upon the mouth by snatching the reins through the hands of the rider. Of course I am referring to mouthing reins, which are fixed to the surcingle or " jockey."

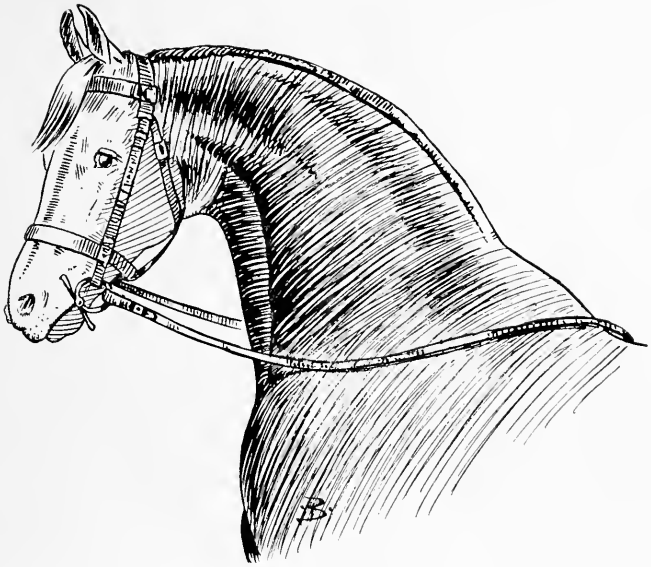

Diagram 11.—A good-tempered Colt with its Mouthing just completed, showing its head in a correct position.

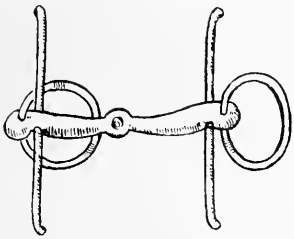

Diagram 12.—A jointed bar Snaffle.

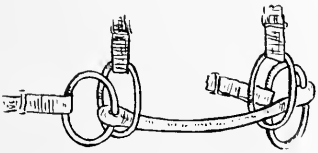

Diagram 13.—A 4-ring half-moon Snaffle.

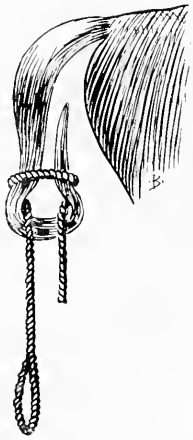

Diagram 14.—Another method of tying the Tail Cord on, but not quite so reliable as the others described.

The elastic reins produce a continuous, dead, irksome strain upon the mouth, and the only way in which the colt can procure even momentary relaxation from this monotonous strain is by pushing its nose outwards, and simultaneously thrusting its head downwards, commonly called "boring." The result of the method is that the bit is retained in one fixed position, in such a way that the animal has a difficulty to "mouth" and champ it, and consequently cannot "froth." I need hardly point out that without "frothing" no colt can "mouth" at all.

I advocate the use of *running* reins for various important reasons. Firstly, they only permit the colt to turn its head from side to side, or to dip its mouth inwards and towards its chest, in other words, to "bend to the bit." This is exactly what you are endeavouring to make it do. Its only means of relieving itself of an unpleasant strain is to *do what is right*. Secondly, the running rein prevents the animal from putting a greater pressure upon one side of the bit than upon the other. Thirdly, it prevents the habit of "boring," it being out of the animal's power to thrust its nose forwards and head downwards. Fourthly, the *running* reins do not give the animal a chance of leaning or "sulking" on either rein—a bad habit, which makes "mouthing" impossible and frequently develops downright stubbornness.

I have seen elastic mouthing-reins used in conjunction with fixed side-reins. This is obviously absurd, as the action of the one must nullify that of the other.

After the foregoing introductory observations I will now proceed to describe the *modus operandi* of "Mouthing." First put on the surcingle, then tie a rein of cord to the lower ring on the off-side, pass it through the bit and back through the upper ring, and a top ring, to the upper near side ring, thence through the bit, fastening off by tying a slip-bow-knot on the lower near side ring: pull it so that you will know it will run fairly easily. Do not fix the cord *tightly*, but simply so as to cause a very slight pressure only on the mouth (see Plates 18 and 19). The object of this is to reduce to a minimum the natural inclination of the colt to resent and "fight the bit"—a frequent cause of future "bad temper." When the animal is thus bitted, stand behind it with a long light switch-whip and gently encourage it to advance and face the bit, instead of backing, which nearly all colts are inclined to do at first.

During the first few lessons the bit should not be retained in the animal's mouth for more than half an hour at a time. Subsequently, the lessons may

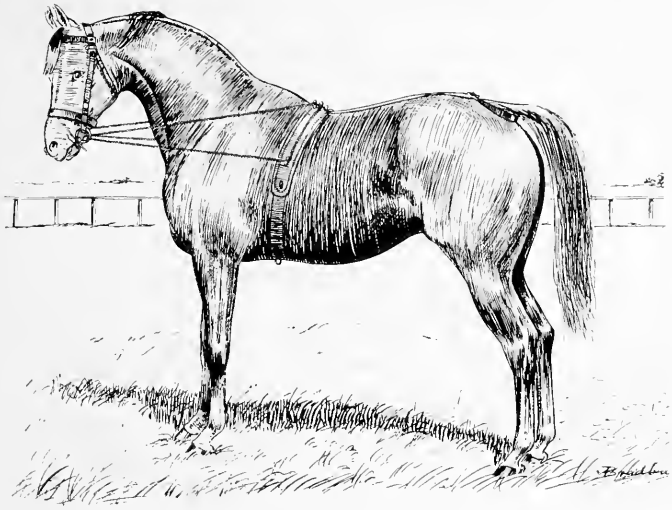

Plate 18.—The Colt with Mouthing Tackle on.

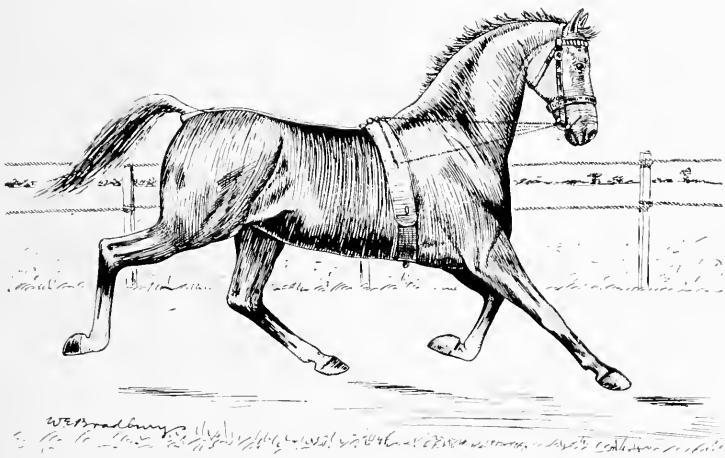

Plate 19.—The Colt being Exercised in the ring with Running Reins on, by Control of the Whip only.

be of rather longer duration (provided the mouth and lips are not sore), and the reins may be *very slightly* tighter. The training should be done in a ring or suitable enclosure—not in a box, if it can be avoided. A box is not large enough for the purpose, and has too many corners, one of which will probably be selected by the colt in which to stand and sulk. In the box it will commence to paw and rub the bit against any handy projections ; or it may get " hung " fast by one of the reins, hang back, and break it. It may, too, lie down and roll over a time or two, in which case it will probably get " cast," through thrusting one of its fore-feet through the reins in order to strike the bit out of its mouth. Another objection to the box is that no one is likely to be " told off " to keep an eye on the animal. It should be trained as soon as possible to face, walk, and trot *against the bit.*

After the sixth lesson the nose of the animal may be brought as nearly as possible into what is considered the correct position. Two lessons may be given daily, and one hour is sufficient for each. When the colt will face the bit readily and strongly, the rest of the breaking harness may be put on, provided the mouth be free from tenderness and excoriations. If the intention be to drive the colt in a winker bridle, the latter should be put on after the surcingle and tackle have been adjusted, so that the animal may *see* all the proceedings. But, as a matter of fact, the use of winkers at all is entirely optional. The breaking can be effected equally as well without as with them. The long reins should be passed through the lowest ring on each side of the surcingle, and buckled to the bit. When using ordinary harness there should be a strap under the animal's belly to connect the two tugs and keep them in the proper position (quite low down), thus preventing the reins from slipping on or over its back.

Occasionally a colt shows a disposition to carry its head *too low*, in which case an overhead check must be used. One consisting of a doubled cord, passed through the first ring on the top of the surcingle, carried up over the pole through the loop between the ears on the head-collar, twisted so as to prevent it from touching either of the eyes, fastened to each side of the bit, and secured at the exact length requisite to enable the colt to get its head in the desired position and no lower, will suffice.

Some colts acquire a habit of throwing their heads violently up and down, a habit which rapidly becomes confirmed and is very annoying, and even dangerous, to the rider. In such a case a martingale must be used in con-

junction with the overhead check. The best form is a "standing" martingale for this particular purpose, viz., one direct from the surcingle, passed through a loop on the breastplate and buckled to each side of the bit. The ends should be so holed as to enable the breaker to adjust the length to a nicety.

Another form of martingale, to be used when riding, is one with rings instead of buckles, the reins being passed through the rings in the ordinary way. This greatly assists the breaker in steadying and controlling the animal's head. When the bridle is a buckled one, it is necessary to have *stops* on the reins. A "stop" is a piece of oblong leather, about 2 inches long by 1½ inches wide, with a slot—through which the rein is passed—in the centre. The rein is then passed through the ring on the martingale, so as to bring the stop next to the buckle on the rein and thus prevent the ring of the martingale from catching on the buckle of the reins.

I do not advocate the use of any such mechanical contrivances as "dumb-jocks," etc. The simpler the appliances the better, provided they be used with thoughtfulness and common sense. As an instance of the deplorable ignorance which one meets with occasionally even now, I may mention an incident which occurred a year or two ago at a certain town in Yorkshire. I chanced to meet, in a street of the town in question, a local breaker leading a colt with tackling on. The animal had upon it a "dumb-jock" with fixed side-reins, and a most ponderous bit in its mouth. The latter looked much more like a sash-weight than a breaking-bit. I asked him why he had that thing in the colt's mouth. He replied, "I can't gie him a 'mooth' with any other bit, and he has got 'reit vicious noo.' He won't take the bit at all, but strikes out directly I try to put it in his 'mooth,' and he has got so rough that I have to *put the twitch on* before I can get the bit in at all." Nice training, this, for a young animal—the old-fashioned, barbarous twitch applied twice daily, followed by a dose of the sash-weight! I asked him to let me have the colt, and promised to drive it, within two hours, in a snaffle bit through the town, in my buggy. The latter was a light American four-wheeled buggy, which could be very easily upset or broken. After the exchange of some observations, pleasant and otherwise, and a guarantee on my part to hold myself responsible for the safety of the animal, he entrusted it to me. After one hour's treatment I was driving it in my buggy, with an ordinary jointed snaffle-bit only, and it would turn, stop, back, etc., almost as well as any old and trained harness-horse could have done.

TRAINING THE COLT TO OBEY THE BIT

THIS portion of the colt's training can only be effectively done in a ring say about 45 feet in diameter. It should be made with strong 4-inch by 4-inch posts, driven or let into the ground to a sufficient depth to ensure stability. The posts should be about 12 feet apart and 4 feet 6 inches high, with two ropes running round, one near the top and one a little more than half way up. There should only be a single turn of the rope round each post with the exception of the two posts at the entrance of the ring, round each of which a double turn should be made. The ropes should be thick and strong. The advantage of using the ropes is that they can be easily fixed and removed: the stakes may be left standing. Should it be inconvenient or impracticable to erect such a ring as described above, an enclosure similar in nature to the one advised in the chapter on "Training Colts to Jump" will do practically as well.

Assuming that a ring, and not an enclosure, be used, it should be erected in a quiet corner of a field, or in a small paddock or *soft* yard. As the long reins form an essential feature of my system of training the colt to obey the bit, the student is supposed to have acquired the art of manipulating them before attempting to carry out the following instructions.

Commence by placing yourself somewhere about the centre of the ring, and drive the colt—with the long reins—a few times round it; then let your near rein slacken and pull smartly on the off one, with a swinging, not a jerky pull. At the same moment just throw, or rather drop, the thong of your whip on the inside shoulder of the animal, in order to induce it to turn away smartly, and not to give it time to fight the bit. After it has gone a few times round the ring to the right, slacken the off-side rein and give a swinging pull on the near one, simultaneously dropping the thong of your whip on the inside, or off-shoulder. Continue to repeat this process, using less and less force as the animal gradually learns to turn. I may observe here that the bit used in the driving lessons should always be a stout bar-snaffle. The side bars assist in teaching the colt to turn, and also save its mouth from injury.

You have now to teach the animal to *stop* at the word of command, i.e. "Whoa!" It will probably be a little refractory at first, and pull against you, holding its head quite low down when doing so. Should it attempt this, do not allow it to maintain a *continued* pull; just step in a yard or so, allowing a momentary slackening of the reins, and then let the animal "come on to the bit" smartly and abruptly. At the same time stand firm, with your body slightly inclined backwards, and say "Whoa!" If these instructions be carried out methodically and correctly the colt will soon learn to stop, even at the word of command alone. As an illustration of the thoroughness with which, by the method described above, it is possible to inculcate the lesson, I may mention a little incident that occurred some years ago. A stranger was riding past me on a colt I had trained, when, to test the animal, I suddenly ejaculated "Whoa!" The colt stopped "dead." The rider however, did not. He went a few yards farther on—alone. I had, unfortunately over-estimated his riding capacity; but, nevertheless, the incident furnished a very striking testimony to the thoroughness with which the horse had learnt its lesson.

To teach the animal to "back," let your assistant take the reins, go yourself to its head, and place your left hand upon its face. Be careful not to teach it to *walk* indefinitely backwards. All you desire to teach it is to "back" when pressure is put upon the bit, or, in the case of draught-horses at the word of command also. At the commencement of this portion of the training, the assistant should stand immediately *behind* the colt—not at its side, as when driving—although after it has been taught to back when standing behind it, it is quite easy to do so from the centre of the ring. When you say "Back!" the assistant should give a strong and steady—not jerky—pull with both reins, putting exactly the same amount of pressure on each rein, and at the same moment you must press heavily with your hand against the colt's face, forcing its head in towards its chest. Should it prove stubborn, put your right hand against its shoulder and push both sideways and backwards simultaneously. Only permit it to back a step or two at a time, then say "Whoa!" Repeat this process a few times, but do not tire the animal by continuously backing it for a prolonged period. Now and again let it have a little trot forward, then stop it and repeat the backing lesson until it will back promptly to the bit without the word of command, and also stop and stand still when the pressure is taken off the bit.

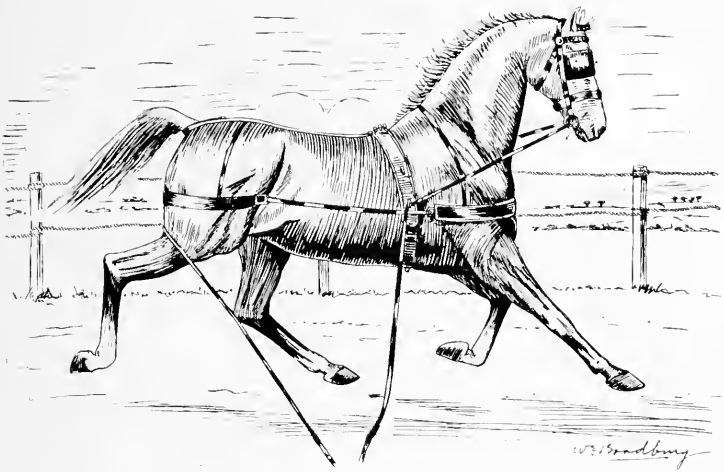

PLATE 20.—THE COLT BEING TAUGHT TO OBEY THE BIT.

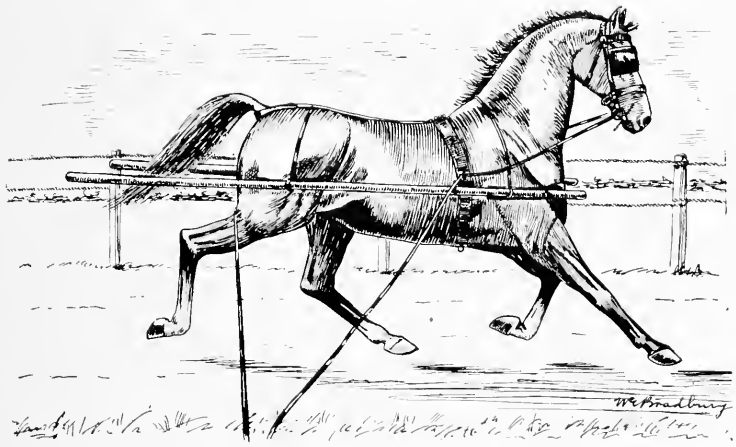

PLATE 21.—TRAINING THE COLT TO "SHAFTS."

Training the Colt to Obey the Bit

In the case of a draught-colt, after you have succeeded in making it back fairly well by the use of both reins from behind, take hold of the near-side rein, close to the bit, with your left hand, and say "Back!" your assistant at the same time pulling it with both reins. Repeat this, holding the off-side rein instead of the near-side one, and subsequently again on each side without any assistance from the long reins; and the colt will thus soon learn to "back" in its training in precisely the same manner as it will be required to do when attached to a cart or waggon.

One of the chief advantages of using a ring for the training is that the colt is less likely to jump a rope than a wooden rail; in a ring, moreover, there are no corners—a great advantage, for reasons explained elsewhere. Further, much less exertion is entailed upon the trainer than under the old style, which consists of accompanying the colt mile after mile, walking behind it all the time. In the ring, the trainer is practically the pivot round which the colt revolves, so that his own movements are within a very circumscribed space, the demands upon his physical resources being reduced to a minimum. The outside rein, passing along the whole length of the colt's body, i.e. from the mouth through the lower side ring on the surcingle to and around its hind quarters, just above the hocks; and the inside rein, passing from the mouth through the lower ring on the near-side of the surcingle, and thence to the driver's hand;—act as long and short levers respectively, and give him absolute command over the animal. Whereas, under the old system, should the animal prove headstrong and endeavour to break away I do not think any man has the slightest chance of preventing it from doing so.

TRAINING THE COLT TO THE COLLAR, BREECHING AND SHAFTS

UNDER the old system of training this was *commenced* by harnessing the colt to a cart, a proceeding which I believe to be radically wrong. A frequent result was the breaking of the cart instead of the colt. The way I have adopted, and found by experience to be the best, is to begin by putting the harness on only, tying the traces to the ring on each side of the breeching—thus causing only a slight pressure on the quarters and collar—and then working the colt with the long reins in the ring (see Plate 20).

After driving it for some ten minutes or so in the ring, take up a hole or two in the point of each trace, thus drawing, so to speak, the two ends of the animal together. Then continue to drive it thus until satisfied that it has become accustomed to some extent to the feel and action of both collar and breeching. Increase the pressure by a further shortening of the traces, and continue the driving until the colt shows no fear or restiveness under the restraint.

A careful examination of the shoulder and quarters of the colt must be made from time to time, to ascertain if any soreness has been created by the unusual friction, and at the slightest sign of any abrasion the training must temporarily cease. Sponge the sore parts with soap and water, then carefully apply salt and water, or alum and water, to harden and heal them. The training must not be resumed until all signs of soreness have disappeared.

This system of breaking never produces *jibbers*. In fact, properly given, it will go a long way to effect a cure of the vice in question.

In order to familiarize the colt with the feel of *shafts* it is equally injudicious to commence by attaching it to a vehicle ; the novelty of the position creates a natural and instinctive tendency to kick. The better way is as follows :—Whilst you are holding the reins, let your assistant take "a third hand," and work the colt with it in the manner described fully in the "Art of Galvayning," rubbing the animal all over the body, particularly along

the sides, shoulders and flanks, these being the parts which will be more or less in constant contact with the shafts. During this portion of the training the "third hand" must be brought *smartly* against the whole length of the sides of the colt, but not with sufficient force to hurt the animal in any degree.

Presuming that the shaft training—which has so far been done with the colt in a stationary position—has been effected up to the above stage satisfactorily, let the animal move forward at a walk, the assistant in the meantime continuing to handle it at the shoulder and elsewhere in a somewhat rougher manner than hitherto. The object of this rougher treatment is to eradicate all nervousness, and render the colt less likely to kick should any accident happen to it in the future while being driven in a vehicle. The old maxim was—"Let nothing touch it, or it will kick." My theory is that it should be touched *everywhere* during its training, and it will be then far less likely to kick under the most trying circumstances.

You may now tie a pole on each side of the animal, as shown in Plate 21. These poles represent the shafts, the swing of them when turning being similar to what the colt will experience when harnessed in the cart. Walk behind the colt, hanging upon the poles, and from time to time press them against the sides and quarters, at first somewhat gently, subsequently pulling with greater force and applying the poles more smartly. Work the animal well with the long reins, turning it alternately right and left. Do this quietly, methodically, and without any shouting beyond the words of command—"Whoa!" "Steady!" and the "click" to "Get up!"—suiting the action to the word. Absolute obedience must at all times be enforced, but violence or abuse of any description must be consistently and rigorously avoided.

EDUCATING THE COLT TO NOISE

I CONSIDER it is a very necessary part of the training of the colt to familiarize it with the various sounds that it will inevitably meet with at a later stage in its career, more particularly in the busy thoroughfares of large towns and cities. Noises such as are produced by brass bands, trams, heavy waggons, traction engines, trains thundering over railway arches, accompanied by the fierce shrieking of their whistles, motor cars, etc., etc. —all these are sufficiently alarming to an uninitiated, untrained or nervous animal, to prove a source of real danger. The importance, therefore, of teaching the colt, at an early stage, to meet all such noises without fear, is obvious. Without such teaching its education is essentially incomplete.

One of the greatest defects of the old system is that it is actually calculated to *generate in the animal a fear of noise*, instead of producing the contrary effect. I refer to that portion of it which is devoted to breaking a colt to harness. The process may be briefly described as follows. The animal is put directly into a vehicle, without any preliminary training in this respect whatever. On each side of it stands a man, one holding it by a rope attached to the halter, the other holding it in some other way, and there is also a man in the trap holding the reins, and perhaps two more pushing at the wheels. The colt is started, and, directly it hears the noise produced by the vehicle moving close behind it, naturally becomes alarmed, and endeavours to get away from it. Probably for the first time in its life it experiences the unpleasant sensation of finding itself unable to escape from the source of its terror. Its alarm increases in proportion to the futility of its efforts; it plunges frantically, finally kicks, and sometimes its terrified violence enables it to break away from the men in charge. If it fails to do this it is conquered solely by brute force, the employment of which is crude, unscientific and reprehensible.

The proper and scientific way is to commence by putting the source of the noise *in front* of the animal before putting it into a trap, so that it can see it and become assured of its harmlessness, instead of behind it, where it constitutes (to the animal) an unknown quantity, full of possibilities

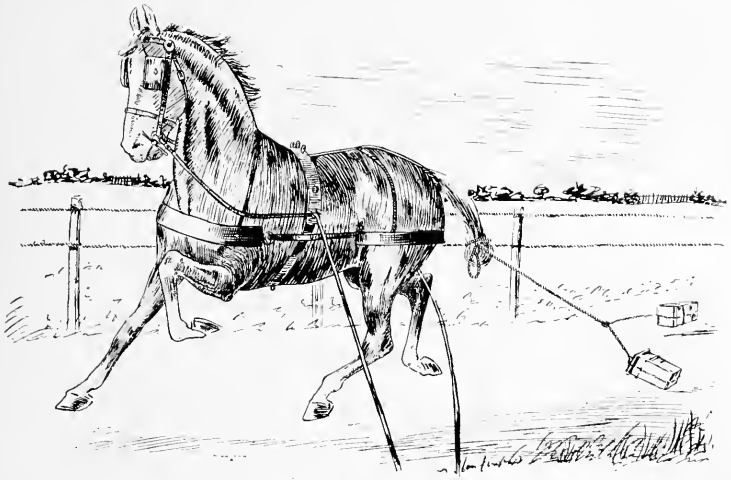

PLATE 22. EDUCATING THE COLT TO NOISE.

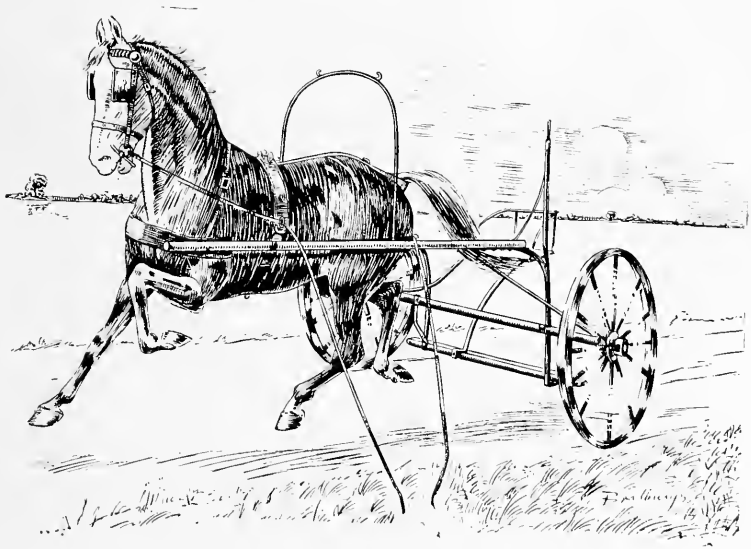

PLATE 23.—TRAINING THE COLT TO MANAGE A VEHICLE.

of mischief and injury. The method is as follows: Procure a couple of square tins, about the size of an ordinary biscuit, or four-gallon kerosene tin, place a few stones in them, and tie them securely with cord to prevent the stones from coming out. Take the reins, and instruct the assistant to stand some three or four yards in front of the colt, with his back towards it, and make a slight noise by rattling the stones in the tins. This soon attracts the attention of the animal, and if it is of a very nervous temperament it tries to turn first to one side and then to the other, and perhaps to run away. Keep the reins well in hand, however, and make it keep its head straight forwards and face the noise. At a sign from the trainer, the assistant commences to walk forward, still with his back to the colt, whilst the trainer makes a "click," throwing the whip lightly on the animal's back, to encourage it to follow the noise. This it soon does; and when it follows readily at a walk, instruct the assistant to run. By this time the colt has acquired almost complete confidence, and it trots after him, turning when he turns, and following him wherever he goes. When this has proceeded long enough, stop the colt, bring it to the centre of the ring, and let the assistant walk in large circles round and about it, constantly rattling the stones in the tins. This accustoms the animal to loud noises from both sides, and also from *behind*. When it remains perfectly still, in spite of the din and rattle all around it, start it at a walk, and let the assistant *follow* with the tins, dragging them on the ground behind him and shaking them now and then to produce as much noise as possible. Repeat this with the animal at a trot, then stop it, and again let the assistant drag the tins about, eventually throwing them suddenly and violently on the ground behind it. When the colt shows no alarm whatever at these proceedings, tie the tins to its tail and allow it to drag them about, as shown in Plate 22.

Finally, make the animal gallop—the tins, of course, flying about in every direction—and then pull it up suddenly, and repeat this until it voluntarily remains immovable after the word "Whoa!" After this stage of the training is satisfactorily completed, again attach the two "third hands" to the sides of the colt, to represent the shafts, and it will now be simultaneously pulling, taking the breeching, have the feel of the shafts at its sides, and the noise of the vehicle behind it. In fact, its training has been carried to the point of being put to the cart without incurring any risk whatever to the animal, the cart, or its driver.

TRAINING A COLT TO MANAGE A VEHICLE

THE preliminary training which the colt will have undergone up to this stage, in conjunction with the education of its senses of sight, hearing and feeling, which must necessarily have been proceeding all along, reduces its training in the management of a vehicle to a very simple matter, as compared with what is the case under the old system, which rendered it a very difficult and formidable matter indeed. Under the old conditions the harnessing of the colt to a vehicle generally constituted the commencement of the training ; it was treated as a matter of great importance, requiring great care in its execution ; extra assistance was sought and obtained, in the shape of a man at the head, another at the wheels, and one or two to "harness up" and push at the wheels when the word "Go!" was given by the trainer. Nothing must touch the animal behind, upon any consideration, the kicking strap must be carefully adjusted, etc., etc. ; whereas, under my method of training, all these contingencies have been provided for step by step, rendering any safeguarding against them quite superfluous at this stage. One man can do all that is required, in perfect safety to himself, the trap, and the animal. Having been thoroughly taught to obey the word "Steady!" the colt requires no one to hold it, nor to stand at its head. It will stand alone, unattended, with its harness on, the reins hanging neatly from the turret, and out of the way. There need be no fear that it will become excited and kick should the vehicle touch it, or when the shafts are brought down upon it for the first time. The "third-handing" to which it has been subjected, and the previous practice with the poles at its sides, will have thoroughly prepared it for such things as these. The kicking strap is not required, all the *kick* having been taken out of the animal—not merely bottled up, but eradicated.

The first time I put a colt to a vehicle I commence—although it is standing unattended—by dropping the shafts down as violently as possible, picking them up and repeating this two or three times. I then run a shaft

between the animal's hind legs and bring the trap forcibly upon its quarters (not so violently, however, as to hurt it), imitating as closely as possible in these and other ways the usual results of an accidental spill. Further test it with crackers and other loud noises, preventing it from becoming aware that the reins are being held by allowing them to hang in a slack manner, although retaining a firm grasp of them all the time. At the slightest movement of the colt bring it to a standstill by the command "Steady!" Then pass the reins through the upper rings on each side, proceed to hitch the colt to the trap by backing it with the long reins, at the same time holding the shafts so as to allow the points to pass through the tugs, and fasten the traces and breeching.

If the driver has not had experience of driving a trap in a ring he had better begin by doing it outside in the field, in which case the trap should be placed facing the ring-opening, so as to give a nice straight drive to start with. If, on the other hand, the intention is to drive inside the ring, it is practically immaterial where the trap is when the colt is first "put to"; but perhaps the best position is close to, and parallel with, the ropes, so as to admit of as large a circle as possible.

In all probability, when first driving the colt round the ring, you will knock down a post or two, and possibly upset the vehicle in doing so. But you need not be concerned. It will be good training for the colt; in fact, I have frequently done it intentionally. If outside, first drive in a straight line, yourself using the long reins, and walking at the side, whilst your assistant, if you consider such a precaution necessary, holds the "Galvayne" strap, which he has previously slipped through the ring on the head-collar. The strap should be held by him in such a manner that the colt will be unaware of its presence, and after a turn or two it should be dispensed with by slipping it off. After driving in a straight line, take *wide turns;* the assistant must keep handy in the meantime, and, at the turning points, should assist the colt round by pulling or pushing the point of the shaft in the direction in which the animal is being guided. From time to time you will notify him to which side you intend to go by saying "Left!" "Right!" as the case may be.

Throughout the whole course of the training the object should be to make it *easier* for the colt to do right than wrong. Some breakers seem to hold diametrically opposite views, and I have even met trainers who

advocated the harnessing of draught-colts to *heavy logs*, in order to teach them to pull. In my opinion the lighter and handier the trap, providing it be strong, the better. The imposition of a comparatively easy task in the first place tends to encourage and give confidence to the colt, and it soon demonstrates this by the free and easy style in which it goes about its work.

Continue to drive the colt at a walking pace round and about the field, starting and turning on each side of the bit alternately, until it will turn *well*, first in large and then in small circles. Having taught the colt in the ring not to show timidity at the sound of a whip, duplicate the same training when in the trap. Test it by going to the extremity of your rein, and cracking your whip softly. Then approach it slowly, gradually increasing the loudness of the cracking so long as the colt remains tranquil ; but as soon as it shows any restiveness you must promptly check it with the long reins, and by using the word "Steady!" as previously directed. This whip-cracking should be continued until the noise ceases to disturb the colt at all. Any alarm it may show during the process should be dissipated by making much of it, and speaking in soothing tones.

The animal should now be worked at a *trot*, everything being done which has been previously done at the walk. A few minutes' rest may then be given, to teach it to remain still. When the colt is sufficiently rested, lock the wheels of the trap, and let the animal pull it for twenty yards or so ; but be careful not to overtax its strength, or " scald " or " wring " its shoulders, and so make them sore. Afterwards the driver may sit upon the seat, either unlocking the wheels or leaving them locked, according to the nature of the ground and the strength of the colt, and when the trap has been started a time or two under these conditions, unlock the wheels (if they have been left locked) and take it on the road.

Should the road in question be a busy thoroughfare, let your assistant slip on the " Galvayne " strap again, if it be advisable to do so, in order to steady the animal when vehicles pass it. I may say, however, that I have never experienced any trouble in this direction after training colts on my system—either here or in Australia.

After about half an hour of road work the colt should be taken home, and after another similar lesson in the brake it should be quite safe to be put into an ordinary light cart and driven anywhere with confidence—always providing that caution and common sense be exercised. For instance,

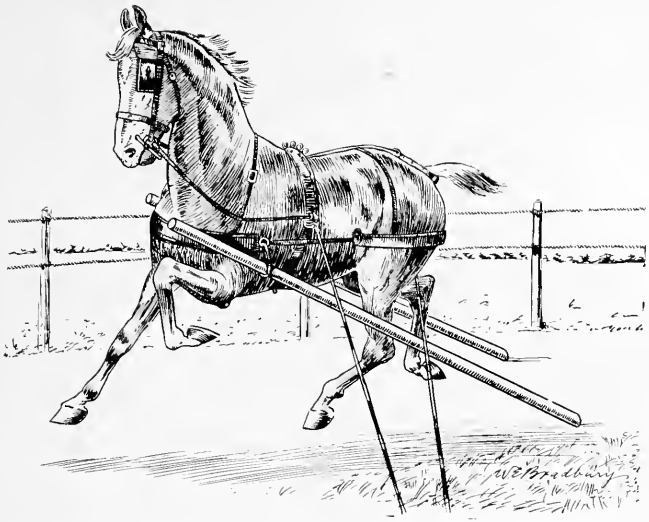

PLATE 24.—TRAINING A COLT OR KICKER; THE FIRST POSITION OF THE POLES.

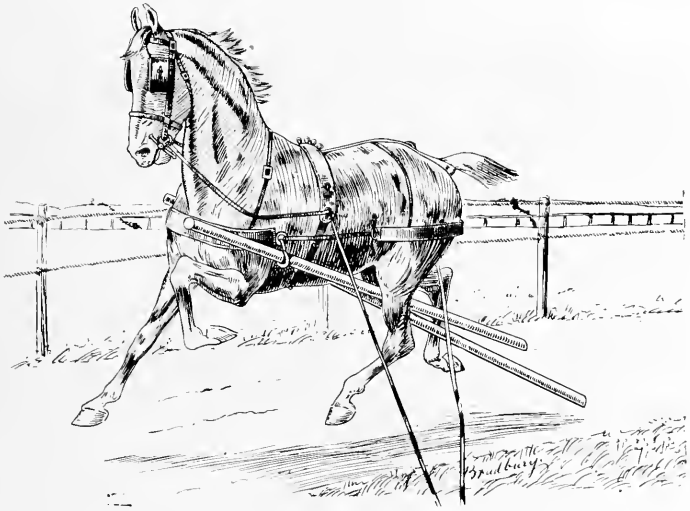

PLATE 25.—TRAINING A KICKER; SECOND POSITION OF THE POLES.

when going down hill for the first time it is not wise to wait until you are half way down the declivity before steadying the animal. The steadying should begin just before the summit is reached, in anticipation of the declivity, so that the animal may be prepared to receive the pressure upon the breeching. Under the old system the majority of accidents with colts occur when they are being driven down a hill for the first time, for the reason above mentioned, aggravated by the entire absence of any previous training to the breeching.

In the foregoing pages I have explained, as fully and lucidly as possible, my method of handling and training colts for harness purposes. But it must be understood that, no matter what system of breaking be adopted, it is an absolute *sine quâ non* that the breaker or trainer be a man of nerve, with good hands and temper. Without these qualifications no amount of theoretical teaching, or even practical tuition, will make him a "horseman," and he had better seek some other and more suitable vocation.

TEACHING THE COLT ITS PACES

BEFORE actually entering upon a discussion of the best methods of teaching the colt the correct styles of walking, trotting, cantering and galloping—the four recognized methods of progression—a few preliminary observations of a general nature may not be uninteresting or out of place.

In England, and on the Continent, the walk, trot, canter and gallop are all usually considered essential, and each must be taught efficiently. In the Colonies a fast walk, in conjunction with a comfortable amble and, in some countries, with a running pace, is all that is required. The reason is that in the Colonies the distances to be covered are vastly greater than they are here, necessitating the cultivation of that mode of progression which can be maintained with regularity and almost indefinitely, and which also entails the least expenditure of strength and energy—namely, the walk. Hence, in such countries as Australia and South Africa, special pains are invariably taken to teach the colt to walk fast and well. In England the average pace of what is considered a good walking horse does not exceed four miles an hour —in all my experience I have never come across one that could do five, although I have heard owners occasionally state that they possessed such a one—whereas in Australia a well-trained walker has been known to do six miles per hour. The speed of the walk there is regulated by the length of the journey. Over a distance which will occupy say three or four hours a good walker will maintain a regular pace of five miles per hour, whilst for really long journeys they seldom do less than an average of $4\frac{1}{2}$ miles ; and the movement is kept up with such clockwork-like precision and regularity that an ordinary bushman can gauge very closely indeed the distance he has covered at any particular time by merely consulting his watch. His experience tells him the exact speed at which his horse is, and has been, going. Very much the same thing is the case in South Africa, where journeys are never calculated by distance, but by time. "Three hours" there means eighteen miles. The ponies pace, or amble, with the utmost regularity at that speed.

A true or collected walk is, however, essential in all horses, everywhere,

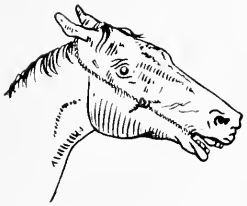

Diagram 15.
The cord "Gag" Twitch.

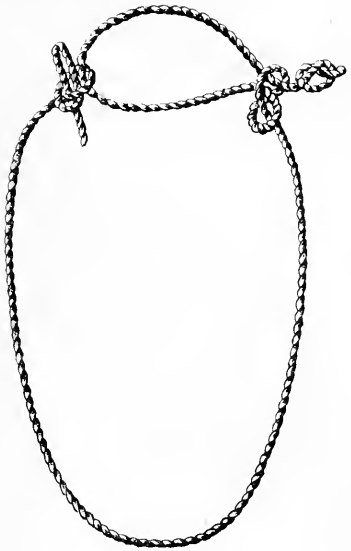

Diagram 17.
No. 2 Twitch off.

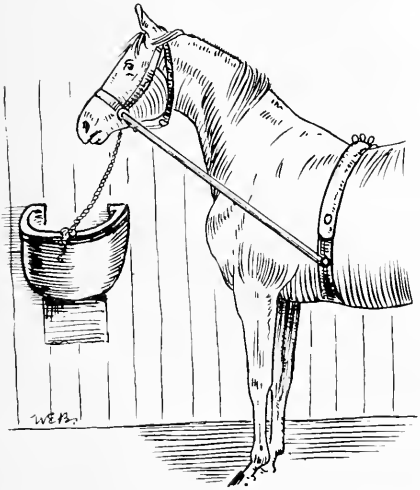

Diagram 16.
The Side Bar.

Diagram 18.
The ordinary Twitch

and more particularly in the case of those kept for riding purposes. Nothing is more calculated to upset the equanimity and temper of a rider than to find himself on a bad walker, in the company of other riders on good ones. The jig-jog in which such an animal indulges is of a particularly disagreeable nature in itself, and the " odious comparisons " which must occupy the rider's mind make matters still worse.

It is an easy task to teach an animal to walk correctly and well, provided the tutor has the necessary patience. The rider must handle the reins in such a manner as to just " feel " its mouth, and his hand should allow itself to be slightly influenced by its head-movement. An unyielding and mechanical pressure on the bit, which would obviously restrain the colt from making its best efforts, must be sedulously avoided. The hand and heels should be used in such a manner as to induce the colt to try to increase the length of its stride, without allowing it to break into a " jig-jog." Directly it shows any inclination to break its walk, it must be steadied by a temporarily heavier pressure on the bit, and by the voice. An experienced breaker knows intuitively when the colt is on the verge of breaking, and holds himself ready to gently prevent it from doing so. As its training progresses, the breaks become less frequent, and it is then that it should be encouraged and urged to extend its stride, not by the use of the whip, but by the pressure of the knees, legs and heels—the latter equipped with blunt spurs or without them, according as the rider may decide from his knowledge of the temperament of the animal. If required to extend itself and really walk its best, the horse must be " allowed its head," but not loosed entirely.

It is not advisable to prolong the walking lesson unduly. After going, say, a couple of miles, quietly urge the animal into a trot for half a mile or so, making it do its best as to style and action all the way. Then pull it up again into a walk and continue as before. Always make it do its best at each pace, to prevent it from acquiring a slovenly or uneven gait. It must not be expected that perfection can be attained after a training of a few days only. It may require a month or even longer of careful riding to effect this, but the time occupied should be considered well spent, as the work is not only necessary but is also most interesting to all real horsemen.

Trotting.—There are two recognized forms of this, namely, the trot which can be recognized by the evenness and regularity of the beats—1–2–3–4, and which is the acknowledged trotting action for all roadsters in

this country, both in the show-ring and out of it, and that of the running trotter or pacer, which is adopted for racing purposes only.

To teach a colt the true action of trotting, it is advisable to proceed as follows : Gently urge it into a slow, collected trot, shorten the hold of the reins, and take tolerably firm hold of the bit (a snaffle with a straight sliding bar I have found to be the best in the *early* training, as it appears to give confidence to the animal sooner than any kind of curved bit) to constrain the colt to bring his hind legs *well under it* and at the same time cause it to lift its forelegs high and extend its feet as straight as possible from the shoulder (see Plate 57, Diagram 44), and flex the knee so as to give a free and graceful style of action. To still further develop the action of the colt it should be vigorously urged forward by demonstrative, yet gentle, means, such as a light tapping with the whip on the fore-arms or quarters, by the heels, and voice, or by a judicious application of the spur ; but the rider must not allow the colt to take a dead pull, or hang on to the bit. The head must be retained in the proper position by a very gentle " sawing " action on the bit, which should be created by a slight forward movement, alternately made by the arms from the elbows, carefully keeping the hands down, thus encouraging the colt to make *some* effort, yet restraining it from going fast. This form of teaching may not necessarily result in the production of great speed-capacity, but it certainly *will* result in improved style and higher action. In the later stages of the training the use of a short-cheeked curb-bit with a stout mouthpiece, or a short pelham, would perhaps be more effective.

The colt should be trained to lead off with the off fore leg, and this can be effected as follows : Supposing it to be trotting fast, the rider should take a shorter hold of the reins, and steady the animal into a slow trot by gradually increasing the pressure on the curb rein. The head should then be pulled somewhat to the left, the right rein being pressed on the off side of the neck. The rider's body should incline somewhat to the right, and the right spur should be used quite close to and *just behind* the girth, as the prick there causes the animal instinctively to move its off fore leg forwards ; *or*, the toe of the rider's boot should gently strike the off side elbow, his left leg should be bent slightly backwards, and a tap with the whip should be given as far back on the near side quarters as possible. This causes the animal to bring its *near hind leg forwards*, as the near hind leg acts in unison with the off fore. This practice should be given in a ring, and the rider

should always circle to the right, gradually diminishing the size of the circle until the colt understands by experience what it is required to do and how to do it. A further reference is made to this matter in the section on Polo. I will simply say now that the trotting lessons should always be of brief duration, and well within the animal's strength. A tired animal can never be efficiently taught its paces.

THE CANTER, being a more *natural* pace of the animal than that of trotting, is for that reason much more easily taught. It is really nothing more nor less than a slow gallop, but there are various styles in which it can be done —some comfortable and graceful, some the reverse. One style consists of a peculiar combination of the trot and canter, i.e. trotting with the fore legs and cantering with the hind ones, or *vice versa*, a kind of pacing canter to which horses in the Colonies are much addicted. It is comfortable for the rider, and also very easy and non-fatiguing for the horse, but its peculiar and rather ugly style of action would render it quite unsuitable for general use, say, in London, or any other fashionable centre of civilization. On the other hand, the "educated canter" is quite an elegant and graceful mode of progression, and in most countries a horse not possessing it would be considered unsuitable for riding purposes. In England there is not so much stress laid upon the qualification, as the major portion of the riding here, apart from that done in the hunting field, is performed on hard, smooth roads, for which the trotting pace is judiciously adopted in preference.

When training a colt to canter in fashionable style it is requisite to use a short cheek bit and bridoon, or a short cheek pelham. In either case see that the curb is adjusted to the necessary length. This can be determined by moving the bit backwards and observing the angle of the cheeks in relation to the curb, which should lie in the groove under the chin. To start the colt on the off fore leg follow the instructions already given, commencing the schooling by practising the animal in circling to the right. Urge it forward by a gentle application of the spurs, restraining it at the same time with the bit. Speed, of course, is not the object to be aimed at, but simply a stylish and comfortable action, and this has to be attained by inducing the colt to bring its hind legs well under the body; at the same time, keep its head in the proper position (as *no* horse can canter gracefully if the head is not carried correctly). This causes the fore-end to be elevated, the action of the fore-feet to be heightened, and the knees to be well and gracefully flexed.

If it should be desired to teach the colt to lead with the near fore leg, the whole process must simply be reversed, and the circling done to the left, instead of to the right. To teach it to lead off with alternate legs, that is, to change them at every few strides, as if dancing, is an easy matter after it has been taught to lead off correctly when circling both to right and left. Instead of circling in one direction only, continue the riding in the outline of the figure 8—a large figure at first, subsequently decreasing it until it is as small as possible. The colt will thus learn to automatically change its leading leg in accordance with the direction to which it is required to circle.

When walking or trotting, four beats of the feet are distinctly audible, but when cantering or galloping the number of beats heard are either two, three or four.

The Gallop.—In this the horse must extend its fore legs to their utmost possible limit. The hind legs, constituting the motive power, should also be drawn forwards as far as possible, and should not have the appearance of simply *following* those in front, or of being dragged along after them. They should move spontaneously, with power and elasticity, flexing the hocks to such an extent that they will be advanced much farther than in the canter. The correct movements of the legs in galloping are the same as that of the canter; the near hind leg follows the off fore, and the off hind follows the near fore. The rider can easily ascertain if the movement is performed correctly or not by the extremely unpleasant "roll" he will instantly experience in the latter case. He must check the wrong action at once by steadying the animal and allowing it to re-arrange the movements of its legs. It is of great importance that any incorrect action of the legs be rectified immediately by more careful riding, as a neglect of this may rightly be held responsible for many of the accidents which occur on the flat when hunting, and riding on a ploughed field or on very soft ground. It is also answerable to a large extent for the tearing off of shoes. For galloping to be safe, it must be done collectedly, and "in hand." If "out of hand," the rider need not be surprised at anything that may happen either to the horse or himself.

It is quite a mistake to imagine that a horse will gallop faster if not held together, and if its head be loosed entirely. The reverse is the case. It will gallop with *less* speed, as it will lose its "collectedness": its hind legs will soon lose their power, and the animal itself commence to roll and swerve.

A fairly good hold of the head is always necessary, to enable and assist it to keep its balance, and utilize its strength and formation to the best advantage.

I do not desire the reader to understand that the suggestions and ideas I have made relative to trotting, cantering, etc., are the only requisite knowledge for the student, or that I have dealt exhaustively with this matter, for to do so would occupy too much space in this work, and no amount of theory without practice would be of use. I believe I have given such information as, if used correctly, will prove a sufficient stepping-stone in the right direction to gain the desired knowledge.

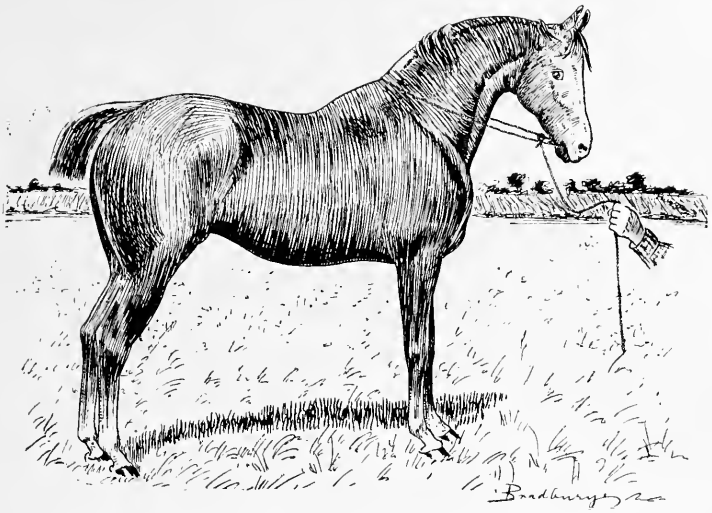

PLATE 27.—NO. 2 TWITCH APPLIED FOR THE PURPOSE OF GROOMING A BITER OR KICKER.

Note.—At all times, when applying this twitch, the animal should have a long shanked halter on.

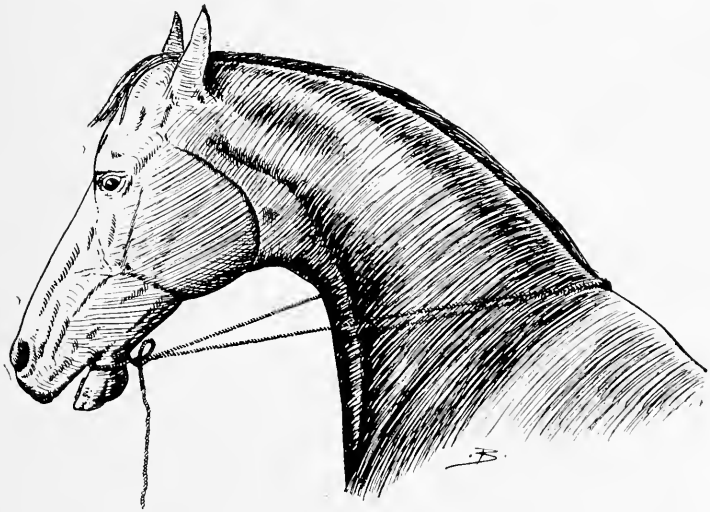

PLATE 28.—THE VICIOUS RACE HORSE, "NORTH RIDING," WITH NO. 2 TWITCH ON.

Note.—The above note applies to this also

TEACHING THE COLT TO JUMP

WITH regard to this section of the colt's training—so much depends upon the animal itself and upon the nature of the surroundings that it is not possible to formulate any code of hard and fast rules which shall be equally applicable to all cases. Some colts are born jumpers and require practically no training at all in that respect, whilst others appear to have no idea of jumping whatever. I have frequently taken an Australian colt and ridden it for the first time at a strong three-railed fence, and it has taken it like a bird. On the other hand, I have had some that absolutely refused to jump even a rail lying on the ground. Generally speaking, Australian horses are naturally good jumpers. They are bred in a semi-wild state, and the jumping instinct appears to be, and doubtless is, hereditary with them. In this country the conditions are totally different, and training to jump is an important feature of the colt's education. The fact of an animal being really a *reliable* conveyance over a stiff country always greatly enhances its value, so that to the breeder of hunters the early and thorough tuition of the stock is essentially an important question. There are, however, widely different ideas as to the best method of effecting this. The age, too, at which the training should commence, is a point upon which there is a great diversity of opinion, some contending that you cannot commence at too early an age, others that it is injudicious to begin in foalhood at all. My opinion is that, provided the foal be a strong one, and bred for a hunter, you cannot begin the jumping exercises too early. At this period of the animal's life, however, it must not be subjected to anything like what is understood by the term *training*, or the result can only be bad—possibly a ruined animal.

The jumping exercise I suggest during foalhood, whilst it is running with the dam, and always, providing that it be a strong and healthy one, should be effected over a series of fences about eighteen inches to two feet in height, such as the dam can easily walk over. The fences, in fact, should be so situated that the dam will be *compelled* to walk over them when leaving the box in the morning and returning at night. I recommend two "jumps" only, which

should be movable, made of 9 inch by 1 inch boards, and padded at the top with bagging. Jumps of this character are safer than those made with rails or battens, as there is no likelihood of the animal getting its legs entangled between them when rolling, or in a fall, etc. As soon as the foal becomes expert over these jumps they should be removed altogether, for, say, a month or two, and then replaced at such times that the foal must jump them when returning to the stable, or going to be fed.

Moderate jumping exercises of a similar nature may be given from time to time during the period of *colthood*, the height of the fences being gradually increased up to three feet by the time the colt attains the age of three years. It is not altogether safe to go beyond a height of three feet : it is so easy to cause a sprain, or develop a curb or spavin. The early jumping exercises in foalhood, however, will have rendered such injury much less likely to occur at any time in the future than is the case when the animal only commences to learn to jump at the age of three years, and has consequently to be forced by being lunged or driven over fences. These early exercises develop and strengthen the muscles, and create in the animal a sense of security and confidence which prepares it for the more formidable tasks it will have to face when it reaches maturity.

The early jumping training of the *colt* should always be effected in a ring or enclosure, and I suggest the following as an easy and cheap method of constructing a suitable one. The necessary materials are :—a few tons of condemned railway sleepers, some peat-moss battens, some wire, and a quantity of " brush," hedge trimmings, etc. The ring should be of an oval shape, to admit of two more or less straight runs. As regards size, a " ring " of, say, 90 feet in length and 45 feet in extreme width, will answer all requirements. Let a trench be dug, of the width of a spade and two feet deep, and insert in it the ends of the sleepers, leaving a space of the width of a sleeper between each. Then fill in and ram well, to make the sleepers perfectly rigid and secure. Run a strand of wire all round the ring, making a single turn of it round each sleeper close to the top, thus binding all securely together. The battens must be nailed " end on " to each other all round the inside. You will now have constructed a strong and cheap fence, which must be thoroughly interlaced with the hedge-cuttings and brushwood, placed all round it and piled up against it on the inside at the base of the fence in such a way that it will form a slope and keep the animals from contact with the

sleepers, etc. The first rub or two against the brushwood will suffice to keep them away in future, and an absolutely safe pad will be provided in case of accidental falls against the fence.

I may here point out that when the colt, owing to lack of previous training, has to be forced to jump (of course I do not mean by being ridden) the forcing may be done in far too severe and demonstrative a manner, the natural result being that the colt becomes nervous and flurried, slips, misjudges the distance, and eventually, by a final desperate effort, clears the fence in such a cramped, unbalanced manner that mischief of some sort often results. The "forcing" should always be done in a very quiet and reasonable manner, so that the animal will not become flurried and have its attention distracted from the object over which it is required to jump.

The jumps should consist of plain strong bars only. Each bar must be encircled by an iron ferrule at each end. In one end an iron spindle, one inch in diameter, must be firmly fixed, and in the other end a hole, $1\frac{1}{8}$ inch in diameter, must be made. The spindle end is then put into a hole made in the sleeper for the purpose, and the other end horizontally against a post erected from 10 feet to 12 feet away from the sleeper (on the inside of the ring, of course). The bar is secured in position by a spindle passed through a hole in the post and inserted in the hole in the end of the bar. This is an easy way of making an inexpensive jump which cannot be broken or knocked down. The inside post should be fitted into a box in the ground, so that it can be readily removed when not in use. There should be one jump only on one side of the enclosure, and two on the other, about 12 feet apart, so that when required an "in and out" or "double" could be made. The bars are readily adjustable as regards height, and by putting other kinds of fences against them, such as a gate, a plain or gorsed hurdle, etc., the animal can be trained to jump different kinds of obstacles—placed either perpendicularly against the bar, or leaning at an angle against it. The bar should not be more than a few inches below the top of the fence, so that a horse which "takes chances" over apparently weak places, and consequently runs risk of injury from barbed wire, etc., will be trapped and cured of the habit.

During the course of the training the colt should have the surcingle on, and the running-reins should be fixed in a very slack manner, so as to allow its head plenty of freedom. Put on the long reins, and use the higher of the two rings on the side if you can manage the colt well; if not, use the lower ring.

Commence with two jumps only, one on each side of the enclosure. After placing the posts into their respective box-sockets, lay the bars *on the ground,* between the posts and the sleepers, and drive the colt round the enclosure two or three times. It will either jump or step over the bars, thus learning by experience to expect some obstacle in those particular places. Side wings can be quickly erected by utilizing two of the spare jumping hurdles. When the colt goes steadily round the enclosure at a canter, take off the long reins and fix a bar in each of the jumps, at a height of about a foot. Lead the colt towards one of the bars, and, when quite near, encourage by speaking to it quietly, but do not *rush* it with the whip, or you will distract its attention and flurry it, and probably cause it to refuse the jump. Your object should be to endeavour to impress the animal with the idea that what you require it to do is of a perfectly simple nature, and not a stupendous feat.

If the colt should refuse the jump, rate it in an angry tone when bringing it away ; in the case of a horse, it may be advisable to give it a few sharp cuts on the legs with the whip. The severity of the punishment should be dominated by the temperament ; mild treatment should be adopted with a highly-strung animal, whereas with a sluggish or stubborn one the whip should be used. But immediately the colt or horse is turned towards the bar again, abstain from punishing it in any way. After every satisfactory jump make much of the animal by giving it, say, a piece of carrot, etc., to show your appreciation of its efforts : but do not make a point of invariably stopping in the same place to do this, or it will soon acquire a habit of stopping in that particular spot after every jump or attempt at a jump. When it has done a few jumps *well* successively, conclude the lesson at once, and again make much of the animal. The great aim should be to make the animal associate this training with kind treatment.

The second lesson, which may be given on the following day, should be in the opposite direction round the enclosure, and the same on every alternate day. Great care should be taken not to flurry the colt during these early lessons, to avoid risk of injury. There should be no training on wet days, as slippery ground is always dangerous.

When the colt takes the two single jumps *well,* put up the third as previously described, and so make a double jump on one side, and as soon as it can negotiate these well, and do everything it is asked to do, inside the enclosure, it

should be exercised over a straight flight of jumps. The straight flight-enclosure should be at least 50 yards long, and should be enclosed by a five or six-foot wooden fence (3-in. by 3-in. posts with 3-in. by 1-in. rails will be serviceable enough if kept whitewashed—if in the rough I recommend 4-in. by 4-in. and 3-in. by 2-in. respectively, as a fence has a more solid appearance in white than in the rough) running parallel with and 12 feet from a good strong fence of any nature. The jumps may consist of gorse fences, open ditches, banks or gates. If a "double" is required, put up a bar. Both ends of the run should be fenced in, the trainer being at one end and his assistant at the other. The colt should have on the surcingle and running-reins, slack as before, and should be driven loose over the jumps. When it has arrived at either end it should be allowed to have a nibble of carrot, or anything else of a tasty nature, and should also be petted and made much of. The lesson should not last for more than half an hour, inclusive of all the rests. If the colt turns stupid or sulky, and the time has nearly expired, make it jump once well, and then terminate the lesson. The greater the *variety* of fences, the better.

For colts which show any strong disinclination to jumping, the use of the leading rope will prove very effective by dispensing with the use of the whip, which distracts their attention. I have recently received a letter from one of my former pupils, from which I extract the following, as bearing on this subject: "I use your leading-rope in teaching young hunters to jump. It does away with the man and whip behind, to take their attention; they do their best to follow, and carefully pick their way over stiles or any kind of fence."

At four years of age, or rather when rising four, a colt should be ridden about the farm in the usual way, and jumped over small easy places to inspire confidence; but care should be taken not to overdo it. It should be "jollied" (to coin a word) up to and over the fences, i.e. ridden in a free and easy manner, so as to impress the colt that its task is an easy one, but, at the same time, the rider must be alert and prepared to put the colt in the proper place the instant it is necessary to do so, i.e., should the colt intend to refuse, the rider must be ready and *waiting* to force it.

If you have more than one animal in hand, train each of them separately in the first place, then work two or three together; this method causes them to take care of themselves and get out of difficulties without man's assistance, as they are constantly getting in each other's way and are obliged to jump

under all kinds of conditions. But it is never advisable to go beyond that number, or there will be risk of injury from the playful kicking in which animals are prone to indulge when first liberated.

If the training of the colt be carried out on the lines indicated above, it will very rarely indeed refuse to jump whilst being ridden. If it should refuse, the fault is probably that of the rider, who has possibly been making a too free use of the whip when taking the colt up to the fences. This creates in the animal the idea that as soon as it comes in sight of the fence it will be flogged, and is therefore bad policy in every way. It is much better, when riding for the purpose of schooling your horse to jump, to abstain entirely from the use of the whip when approaching the fence. If it refuses, turn it back and, *after it has turned*, and while leaving the jump, administer a few sharp reminders with the whip, which should be held in the hand on the same side as that to which the animal ran off. Directly its head is turned towards the fence again, cease to apply the whip, pass the reins to whichever hand the whip is in and use the free hand for the purpose of petting and "making much" of the animal. As soon as you arrive at the necessary distance from the fence to set the horse going again, transfer the whip again to the same hand and hold the reins in the usual manner.

The severity of the punishment inflicted for refusing the jump must be regulated by the temperament of the animal. A good "rating" will constitute sufficient punishment for some, whilst a few really smart cuts with the whip will be necessary for others. In this, as in every other matter affecting the treatment of the horse, a good deal must be left to the judgment and discrimination of the breaker. Although I am aware that nothing is more galling to a rider than for his mount to persist in refusing, it is a great blunder for him to lose his temper, however great the provocation. The effect is invariably and necessarily bad on both horse and rider.

It is rather a singular fact that a horse seldom turns to the right when refusing a jump; in nearly every case it turns to the left. Doubtless the explanation of this is the habit of holding the whip in the right hand. If the reader be ever called upon to ride a horse which is known to be an habitual refuser, let him try the whip in the left hand. The first application the animal receives from that quarter will be a surprise to it, and may go a long way towards preventing it from running off.

HOW TO PUT A VICIOUS HORSE IN A STRAIGHT JACKET

TIE the animal to a post, as shown in Plate 46, and throw a looped rope over its quarters, the loop being large enough to touch the ground behind the horse whilst the upper part rests on its back. When the animal moves or kicks, which it will do as soon as the rope touches it, allow it to have its kick "out." When it is quiet, work the loop down its quarters by a series of slight jerks or swings, until it is situated immediately above the hocks, then pull the loop tight and tie its hind legs together by means of a series of half-hitches. After making the legs secure, pass the rope over and round the loins, and make a half-hitch; then take the rope forward and secure its fore legs, above the knees, in a similar manner, terminating by bringing the rope over its wither. Fasten off as shown in Plate 46.

The animal will now be able to stand, and will be capable even of making very slow progress, by a succession of low and very fatiguing jumps, round the ring. When it gets used to the unaccustomed restraint, which will not as a rule take more than ten minutes or so, you may mount in safety—of course bareback at first. Then put on a saddle and bridle, and if the animal remains quiet dismount and untie the rope, re-mount and away you go. This may be a somewhat crude, but it is certainly a most effective and successful method of dealing with the worst of brutes, more especially strikers, kickers, and buckers. I was obliged to practise it largely in South Africa during the war, when time was an important consideration.

I am a firm believer in single-handed methods for the treatment of horses, whenever practicable. A strong post, combined with good and reliable tackle, constitutes the best assistant the breaker can have in the above case. It is always there when you want it, and it never gets in your way. When using a post, however, be careful to tie the rope the requisite height, so as to prevent the animal striking the ground with its head when it falls.

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THE RAREY SYSTEM

ABOUT fifty years ago Mr. Rarey introduced into Great Britain his system for the taming of vicious horses and colts. He met with great support, had many hundreds of pupils and obtained world-wide celebrity. In fact, for very many years he was regarded as the greatest authority on the art of taming and training. In my opinion, however, and in the opinion of many other competent judges, his methods were radically wrong. They were based entirely upon the fundamental idea of subjugation *solely by exhaustion*, and I contend that any system evolved from such a basis must necessarily be unsound and fail to *permanently* eradicate the vicious tendencies of the animal. Temporary benefit it may, and undoubtedly does, produce, or Rarey could not, of course, have acquired his reputation. But, as a striking confirmation of my contention that a permanent cure of vice cannot result from "exhaustive" methods, I may point out that, out of all the many hundreds of former enthusiastic admirers and pupils of Rarey, it is now scarcely possible to find *one* who still believes in his system.

It may not be uninteresting to the reader to briefly explain the method of "Rareying" a horse. A bridle was first put on, then the near-side leg was strapped up and the horse was driven round the ring upon three legs until partially exhausted. A surcingle, with a ring attached at the belly part, was then put upon it, another strap was attached to the fetlock of the off fore leg and passed through the ring into the right hand of the operator. The animal was then urged on. Immediately it moved, its off leg was pulled from under it, thus bringing it down upon its two knees. It would naturally struggle and fight and stand upon its hind legs, and, in its frantic endeavours not to fall, was very liable to come right over backwards and kill itself on the spot. If this catastrophe, or any serious injury, were avoided, the "Rareyfiers" would wait until the animal had sufficiently exhausted itself and become unable to rise from its two knees, and would then stand at its near-side shoulder, gradually compelling it with the off-side rein to turn over on its near-side,

recumbent on the ground. This completed the operations, and nothing remained but to stand upon the animal's body and triumphantly proclaim to the world that it was "tamed." To test the permanency and real value of such "taming" it is only necessary to wait until nature has resuscitated the forces of the animal subjected to such treatment, hitch it to a vehicle to which it is not accustomed, and then attempt to drive it out—say on the day following the operation—without a repetition of the "exhausting" process. The result will be tolerably convincing, although decidedly unsatisfactory. I do not wish it to be inferred that I condemn the Rarey system simply because one single operation fails to eradicate the animal's viciousness. This would, of course, be unfair. I contend that an indefinite series of such operations will fail to permanently produce the desired effect, that the "taming" lasts as long as the exhaustion and no longer, and that, in fact, the whole idea is radically wrong. Another indictment against the "Rarey" system is one that will appeal to all humanitarians, namely, that its practice is necessarily attended with great and unnecessary physical abuse of the animal.

TRAINING A COLT OR HORSE TO STAND FIRE

FOR many years I have adopted the following treatment, which I have proved to be quick, safe, and effective.

After removing the hind shoes, so that it does not cut itself when turning, place the animal in the ring, swing it round a few times by taking hold of the halter and tail (see "Art of Galvayning"), and tie it in the Galvayning position. Then accustom it to the crack of a whip and the noise of the tins, as explained in a previous chapter ("Training the Colt to Stand Noise"). When it shows no timidity whatever at these proceedings, continue the treatment by using *crackers*. Chinese crackers are the best for this purpose, as they make a good report and do not fly about in every direction like the usual English firework crackers; and you should have previously provided yourself with about twenty bundles of them. Separate one of the bundles into single crackers, and take up a position on the opposite side of the ring to the horse, which, of course, still remains tied in the "Galvayne" position. Light a single cracker and allow it to fall upon the ground, close to yourself. The horse will be sure to display more or less excitement, and will probably commence to turn quickly round and round. If so, abstain from lighting more crackers until it has settled down again quietly. Then continue lighting the crackers, singly as before, and dropping them on the ground beside you until the animal exhibits no signs of alarm. You may then begin to throw the crackers, singly, about the ring, gradually pitching them nearer and nearer to the horse as it shows less and less excitement and fear, and being careful not to strike it with any one of them, or some of your previous good work may be undone. After a little time, as satisfactory progress is made, you may light sections of bundles at a time and throw them about and near to the animal, until ultimately you can explode a whole bundle close to it without disturbing it in any way. The length of time occupied by these operations must of course depend to some extent upon the animal itself, and the readiness with which it familiarizes itself with the increasing noise of the

crackers; but no matter what its temperament may be, the horse has yet to be foaled that cannot be trained in the above manner to stand fire.

Let your assistant now put a saddle and bridle on the horse and ride it round and about the ring, whilst you continue to light and throw the crackers indiscriminately about the ground. Then direct the assistant to bring the animal to a standstill (the crackers still being continuously used) and discharge a revolver. If the horse remains perfectly quiescent under this test—the explosion of crackers and revolver simultaneously—substitute a gun for the revolver, and repeat the operation. Should it refuse to remain quiet under this further test, revert to the "Galvayning" position and treatment, or, if you prefer to do so, work it with the long reins, using the tin and cracker treatment. The whole process need not occupy more than about an hour, after which any horse should permit a gun to be discharged from its back without showing a trace of restiveness or fear. A test should be made on the following day, and, if necessary, the lesson repeated. When discharging the gun in the first instance, hold it upright and not close to the animal's head. Subsequently you may discharge it from all reasonable positions.

It may be pointed out that the Chinese crackers are of equal service when training a horse to the presence and noise of motor-cars, etc., as a supplementary treatment to the one described in the special chapter devoted to that matter. In fact, the whole of the above operations would be useful for that purpose.

TRAINING A COLT OR HORSE TO THE VICINITY OF STEAM OR MOTOR-CAR

THIS is best effected when the animal is in the " Galvayning " position. The Swinging-rope method, which I have illustrated and recommended elsewhere, is good when space and appliances are not available for ring training, and it also constitutes an effective supplementary portion of the ring treatment, which should be carried out as follows (see Plate 29).

The roped ring should be so situated as to allow of a motor-car being driven around outside it, and also to and from it, etc. Place the animal (which should be unshod behind) into the ring, and tie it carefully in the " Galvayning " position. Place yourself in the centre of the ring, to enable yourself to direct the motions of the motor-car by signs. The car should be stationed some distance away, say about fifty yards if possible, and some little noise made to attract the animal's attention to its presence. The latter will probably at once attempt to run away ; but of course it will be unable to do so. The feeling of comparative freedom which is allowed by the " Galvayne " position tends to create confidence, a result which would not be attained at all if it were rigidly restrained in one position by force, and prevented from moving at all. Should the animal show indications, by the rapidity of its movements, of considerable nervous excitement and alarm, take time over the initial stages of the training, and do not allow the motor-car to come into closer proximity at first. When the colt has calmed down somewhat, let the car be driven as *quietly* as possible round and round the ring, the size of the circle being gradually reduced as the subject displays less fear and more confidence. Remember that the course of training may be suspended at any stage and the animal allowed a rest, should it be deemed advisable, by unloosing the " Galvayne " strap. If this be done, groom the colt quietly with a rubber or wisp of hay, allowing the car to remain in the place where it was stopped and to continue making the same slight noise as at the commencement of the training.

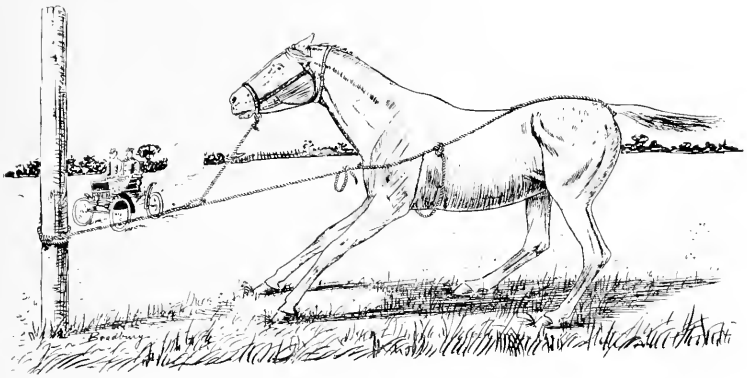

PLATE 29.—CURING A HALTER-BREAKER, OR TRAINING A HORSE TO THE VICINITY OF A MOTOR-CAR OR STEAM.

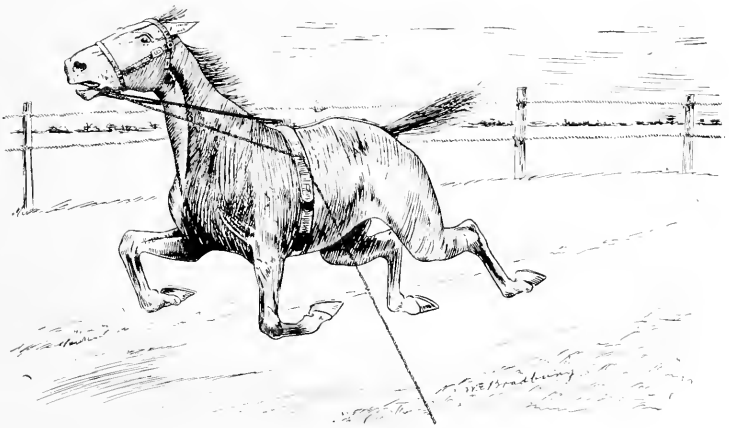

PLATE 30.—THE RUNAWAY TWITCH.

Note.—This twitch is intended to be used when the harness is on, *if necessary* at the termination of the driving lesson in the ring, should the subject be a confirmed "bolter."

When the animal has rested sufficiently, tie it again in the " Galvayne " position and resume the training on the original lines until no excitement whatever is apparent, no sweating—until, in fact, its actions are perfectly normal. Then untie the ropes, or open the gate, and allow the car to enter the ring or enclosure, which should then be re-closed. If a small ring be used it will not be necessary to drive the motor-car into it. Let the car be driven at first slowly and quietly round the enclosure, as near the boundary as possible, and proceed with great caution if further signs of nervous excitement are exhibited by the animal, taking ample time over this portion of the training. As soon as may be advisable untie the " Galvayne " strap and rub the horse gently as if grooming it, then lead it to the post in the centre of the ring and secure it there with the rope, as shown in Plate 29, placing food and water before it. Should there be no post, your assistant must act as a substitute, and hold the " swinging rope." All this time the car should have been kept quietly moving, alternately approaching and retiring from the animal, and moving in zig-zag lines in front of and all about it, its noise and pace being at the same time very gradually increased. The horse should be very carefully watched during the whole of these proceedings, which must be regulated in accordance with its behaviour. If all is satisfactory let the car be brought up alongside it, as quietly as possible. Then stop it and remain still, but sound the horn from time to time. If the horse takes no special notice and continues to feed uninterruptedly, it may be assumed that all fear of the motor has vanished, at any rate for the time being. It will generally be advisable to repeat the lesson a few times, but the whole course of the treatment can be effectively performed in two or three hours in most cases, and it will have been time exceedingly well spent, as no horse can be considered safe until all fear of noises connected with steam or electric traction has been completely eradicated.

USEFUL HINTS WHEN HANDLING COLTS

BEFORE " Galvayning " a colt see that the nose-band of the head-collar is low down.

Always keep a double hold (viz., one near the head, the other at the end of the shank) of the halter-shank or " Galvayne " strap. In the end of it there should be a knot, which should be held in the hand farthest from the head. *Never* twist the shank round your hand.

When " third-handing " a colt, do it well inside the thigh and hocks, and also under the tail, so that should a rein get there accidentally at any future time the animal will be unlikely to kick. The object of the " third-handing " process is to accustom the colt to be touched in any and every part of its body.

Do not give your colt a chance to break away from you under any circumstances whatever. You can generally prevent it, if you are determined to do so, and have taken the precaution of fixing the nose-band of the head-collar well down on the face, and using a very long shank fastened to a movable ring on the chin strap. This arrangement gives a powerful side leverage every time the colt attempts to break away, bends its neck, and brings its head towards you and swings its quarters from you.

If there are two men working at the animal at the same time, the one holding it should always be *on the same side* as the actual worker. If the colt should attempt to kick, the one holding it naturally pulls the head towards himself, and in doing so he is bound to pull the kicking part of the animal towards the man on the other side, if there is one there.

When picking up a colt's feet, begin with the near fore-foot by putting a strap round the fetlock and taking hold of it rather low down with your right hand. Press with your left knuckles on the animal's shoulder, close to the upper part of the arm, thus pushing the weight upon the off leg ; the near foot can then be easily lifted. Next put the strap on the near hind-fetlock, in a similar way ; take it in your right hand, put your left on the

animal's hip and push with just sufficient strength to throw the balance of its weight upon its off hind leg. Each leg must be put through a similar training, and each time you lift a foot you should say loudly "Hold up!" Repeat the above process a few times, and the colt will soon learn to lift up its feet whenever required to do so.

If *at any time* you cannot induce a colt to do *exactly* what you require, make it do something else. Enforce obedience of some sort at the time, to prevent the animal from getting the impression that it can successfully dispute your will. For example, if it refuses to back, make it turn sharply to the right, then to the left, with the long reins. If it refuses to start, turn it in a similar way until it will.

Arrange the bit low when putting on the winkers or bridle the first time; lift carefully with the left hand until it is above the eyes of the animal, then pass your right hand *over* its head, quietly lift the poll-piece, and place the bridle in position. Simultaneously open the colt's mouth slightly, by putting in your left hand from the off side, and guide the bit in, and pull up the bridle with the right hand. The bit will then slip into the mouth without any difficulty; arrange it so as to lie on the bars of the mouth.

When driving a colt in the ring with long reins, it is necessary to teach it to start and turn *simultaneously*. This should be done to both right and left.

Never flog a colt for not doing *well* something it has *not been taught to do at all*.

Always *ease* the training when the colt commences to "blow," and at the slightest sign of real distress cease all training for the time.

Never take the colt from the stable when feeding, for the purpose of training.

Always ride your colt alone, i.e. not in the company of another horse, as is very commonly done.

Never trust a boy to mind a colt in the streets. But I heard some one say one day that a good boy is better than a bad man.

Note.—When "Galvayning" a colt always use the Patent Leather Head-collar with the detachable "Galvayne" strap, which can be obtained from Messrs. Clark & Son., Wholesale Saddlers, Mill Hill, Leeds, Yorks.

BITS AND BRIDLES

A CORRECT knowledge of the principles which should regulate the use of these is one of the most important features of scientific horse management. Unfortunately, there is no branch of the art respecting which there is more lamentable ignorance displayed. Many a valuable colt has been transformed into a confirmed bolter, and utterly ruined by injudicious bitting. In fact, it is really distressing to observe how frequently the legitimate use of the bit is misunderstood and perverted.

Generally speaking, in the control of the horse too much is expected from the bit itself. Some riders imagine that by using a heavy and cruel bit they are, or ought to be, able to do anything they want with a horse, whether the animal has been properly trained or not. But, as a matter of fact, no matter what kind of bit is used, it *cannot act as a substitute for efficient training*. To ensure proper control, proper training is essential.

Under any and all circumstances the use of heavy and savage bits is strongly to be condemned. They invariably spoil the animal's temper, lacerate its lips and jaws, and impair the sensitiveness of the bars of the mouth, eventually rendering them quite callous and impervious to the sense of feeling.

A snaffle bit, in conjunction with effective training, is more to be relied upon than any instrument of torture yet invented and termed a bit. You may ride for thousands of miles through the bush in Australia and find nothing else, except perhaps occasionally a plain pelham, in use. Certainly you will not find anything which could be described as a harsh or cruel bit. And yet, by all who know them, the Anglo-Australians are acknowledged to be, as a race, the equals of the best horsemen in the world. Many of them spend the greater part of their lives in the saddle, and learned to ride almost before they learned to walk. The Australian "stock," or "boundary" rider has no horses "made" for him, but has a wild one selected for him from a mob. He has to do the catching, mounting and training himself, or find himself "out of a place." The country is very rough, and more

or less dangerous to ride through. Yet the stock-rider gallops fearlessly through tangled and interminable forests, along mountain sides, and over innumerable boulders and trunks of fallen trees, mounted on a horse with nothing but an easy snaffle in its mouth. Using the neck-touch only, he maintains perfect control over the animal, wheels it with lightning speed, making turn after turn in rapid succession, and frequently having to jump at every few yards over formidable obstacles of every description; yet accidents are few and far between. This demonstrates very conclusively that, provided the animal has been properly trained and the rider be a capable horseman, the snaffle bit is quite sufficient for all requirements.

The use of a punishing bit defeats its own object in this way. The animal soon finds that, by constantly pulling, the resulting pain gradually gets less and less, so that it eventually becomes, in consequence, a hard and confirmed puller. If the bit is to remain a really effective factor in controlling the animal, it is essential that the bars of the mouth retain their sensitiveness, that the bit be an easy and light one, and that it be handled judiciously. The bit should be regarded as a means of conveying to the animal the wishes of the driver or rider, not as an instrument of torture, as is too frequently the case The "finer" the mouth of the horse, the greater the necessity for a light bit, and for delicate and skilful handling on the part of the rider. Many a really valuable animal has been sacrificed, financially speaking, because it has resented rough and clumsy manipulation of the bit. Some people even admit that they encourage their horses to "pull," in order to assist them to retain their seats—a monstrous perversion of the real uses of the bit and bridle, and a practice which naturally and inevitably results in ruining the mouth and manners of the animal. Another disadvantage attending this method of riding, or rather hanging on, is that the rider lays himself out for a beautiful "purler" should his horse swerve or "peck" badly. He must necessarily have been exercising great pressure with straight legs on the stirrups at the time, and these would form a pivot around which he would revolve, terminating the performance by doing the "comet trick." If a rider really cannot help hanging on in the manner described, he should abstain altogether from mounting any horse which demands the exercise of any great riding ability.

All jockeys prefer the snaffle for racing purposes, and so do many of the best hunting men. If they do make use of a curbed bit at all, it is only

as a kind of reserve, for the use of all four reins largely modifies the action of the curb. Should a curbed bit be deemed absolutely necessary in any particular case, a strong pelham with a slightly ported mouthpiece, or a short-cheeked stout curbed bit with a sliding and slightly ported mouthpiece, in combination with the ordinary bridoon, should be used. Any horse which is not safe to ride with a bit of the latter description is evidently in need of the " long-rein " treatment. A slightly ported mouthpiece does not constitute a severe bit, but quite the reverse, providing the bit fits the mouth. The straight sides will rest on the bars of the mouth, and the small elevation in the centre will prevent any pressure upon, or injury to, the tongue. As a matter of fact, as far as colts are concerned, I have always had a partiality for a slightly ported or curved mouthpiece, as this shape admits of the tongue lying comfortably in its proper position, namely, *under* the bit.

If it be desired to accustom the colt to the action of a curbed bit, or to two bits, it is advisable to have the curb chain thoroughly covered and padded with wash-leather, or to use a plain flat soft strap as a substitute for the chain. The surcingle and side reins should be used, but only very slight, if any, pressure should be applied at first, or the colt may become nervous, and possibly commence to rear. In fact, during the first few lessons it is better not to put any pressure on the reins at all, their weight alone being sufficient for the purpose. Teach your colt, from the commencement, not to take a dead pull on the bit, and in good hands it will never want to do so.

A sympathetic feeling should always exist between horse and rider, the communicating media being the animal's mouth and the rider's hands. As Whyte Melville remarks in his *Riding Recollections*, " If you pull against a post, the post will pull against you, and if you don't pull against the post, the post will not pull against you." This is precisely the case with regard to the horse. If you don't pull against it, it will not acquire the habit of pulling against you. And as regards the efficacy of pulling, in my opinion the man has yet to be born and the bit to be invented that will stop a determined horse when bolting.

Any and all kinds of bits should fit the mouth perfectly as regards width. The cheek-straps should be carefully adjusted, so as to keep the mouthpiece in its proper place, i.e. right across the bars of the mouth, *just above the tushes*,

and not, as I once saw advised in a book on Breaking, in the corners of the mouth, "so as to cause the slightest of wrinkles." One day I noticed a colt, which I was informed had been bitted for some two or three weeks, that had the mouthpiece forced right up close into the angle of the lips. I drew the attention of the breaker to the fact, and informed him that the bit should not be where it was, but on the bars of the mouth. He replied that it *was* on the bars, which, in his opinion, were *the angle of the lips*. And this ignoramus supplemented his information by remarking, in an offensive manner, that "he ought to know, as he had 'broken in' (!!) hundreds of colts."

One important point, that must always be taken into account by the breaker, is that the jaws of some horses are much narrower than those of others, rendering the limit of flexion comparatively small. This narrowness of jaw-formation is rather common in Australia and South Africa, where "ewe-necked" horses are frequently to be met with. If the heads of such horses are forcibly constrained into the requisite flexed position, the pressure of the jawbones on the glands that lie close to and under the angles of the jaws, up towards the ears, creates severe pain and swellings. These cause the animal to become "dull," and to show signs of apparent temper, by throwing itself on the ground, etc. In such cases the forcible application of severe bits is simply useless barbarity. All such peculiarities of conformation should be carefully studied and provided for.

It will be gathered from the foregoing that my preference is for the snaffle bit under most circumstances for all general purposes. Some do not consider that the four-ring snaffle presents such a smart and "sporting" appearance in the hunting field as the curb bit and bridoon, but, to my mind, a fairly heavy, flat, two- or four-ring snaffle, with plain, strong double-reins, has a thoroughly workmanlike appearance, which will commend itself to the majority of riders and horsemen. One of the objections to the use of four-ring snaffles for riding is that, each rein being fastened independently to each ring, the rein on the outside rings is likely to become twisted through the mouthpiece of the bit being turned round by the action of the tongue. To avoid this, and also to avoid impeding the action of the bit, the outside rein should be wider than the inside one, and should also have a strong leather keeper sewn on each side of it, near the bit, or, better still, sewn so as to button over on a brass stud, through which each inside rein should be passed. This contrivance will prevent the bit from turning and the outside rein from

twisting, and the rider will then be able to realize to some extent the immense controlling power of the four-ring snaffle when properly applied. If a ring martingale be used in conjunction with the snaffle, the inside reins should be selected for passing through the rings. See that the mouthpiece is in the correct position, namely, just above the tushes.

The action of this bit can always be "kept alive"; the slightest movement from side to side instantly draws the animal's attention to your requirements. This cannot be done so readily with a heavy or severe curb bit, nor, in some cases, so effectively with a curb bit of any kind.

I am aware that when a horse through defective mouthing is non-sensitive to the ordinary action of any kind of bit, and "gives its head" and goes in an opposite direction, a ring snaffle would not be suitable, as it would most likely be pulled sideways through the mouth by any great strain upon either rein; but although a curb bit could not be so served, yet it would equally fail to make the animal obedient; it would still bend its neck, "give its head," etc., as it did with the snaffle bit. Such an animal requires mouthing and schooling with the long reins.

At the present time I am driving a pair of "runaways," using nothing but common four-ring snaffles (of course they have both been mouthed and schooled). Both animals are in good fettle, and I can pull them up without difficulty within their own length when going at any speed. I was informed by the seller of one of them, at the time of purchase, that it was a confirmed bolter; in fact, at that moment it was in a positively maddened condition; blood-streaked froth was dropping from its mouth and chest—the result of the use of the most atrociously barbarous bit I had ever seen. I took it in hand at once, and trained it to single harness, and on the very day I purchased it drove it without the least difficulty and under perfect control in an ordinary four-ring snaffle.

I might refer to another case I treated some years ago in Yorkshire to illustrate the efficacy of the snaffle. A lady owned a very fine pair of carriage-horses, which were, however, pullers and bolters of the most pronounced type, each of them having frequently run away when in single harness. I gave them the long-reins treatment, and their manners improved so rapidly that within a week I was able to drive them, either singly or as a pair, at any pace, just carrying the weight of the reins nicely, and stop them in a moment, using plain jointed four-ring snaffles only. On another

occasion I had entrusted to me a brougham-horse that appeared to be an incurable bolter. It had several times badly damaged its vehicle, and its latest exploit, prior to my taking charge of it, had been to smash through a confectioner's shop-window, at a cost of £50 to its owner. When I gave it the first lesson in the ring, it confirmed its reputation by breaking my specially strong long-reins, not having anything else handy to break or damage. In order to be able to stop it I had to wind the reins round the centre pole. But, after one lesson, I could, and did, drive it anywhere, in a plain jointed four-ring snaffle.

I frankly admit that the curb bit, in one form or another, has come to stay. Many riders, of more or less experience, regard it, in fact, as the only bit a gentleman can use. This is a matter of opinion, but in any case, if a curb bit *must* be used, let it be the most modified and least harsh form of it, and let it be used in conjunction with a bridoon. The curb must be adjusted with great care, so that it will fall into the only place that is proper for it, namely, the groove immediately under the chin ; otherwise the bit cannot act properly, and small ulcerous sores will result from the action of the curb on the centre of the lower jaw.

One of the worst products of the use of the severe bit is the "star-gazer," i.e. an animal which throws its nose up and keeps it there, its lips and head trembling in terrified expectancy of a painful application of the curb. Its timidity has become so extreme, and its mouth is so light and untrained, that even the slightest sudden pull is unendurable to it. There is no doubt whatever that this bad and dangerous habit of "star-gazing" is solely due to the use of a savage bit by heavy and uncertain hands.

To cure such an animal, and restore its lost confidence, I advocate using a thick rubber bar-snaffle, and commencing its training by putting on the surcingle and side-reins—not tightly at first. The animal should be turned round the ring loose, the reins being shortened after a time. It is possible that it may, in spite of any pressure you may apply with the side-reins, succeed in getting its nose up. If so, put on a standing martingale, which can be shortened up daily with the buckle ends attached to each side of the bit ; see that the mouthpiece is low down on the bars, and instead of buckling the long-reins to the bit in the usual manner (after passing them through the lower side-rings) pass them through the outside ring of the bit, and fasten them to the higher of the two side-rings on the surcingle.

Then proceed to drive the horse round the ring, gently at first, or it may become alarmed and rear. If sufficiently accomplished, you may work it "with the whip" before using the long-reins, and make it go through the simple performance of walking, trotting, backing, etc., all of which will greatly assist in the cure. If you are not equal to this, let the animal (after you have fixed the tackle on) roam about the ring as it chooses for an hour or two, and repeat this lesson daily for several days *before driving it at all.* Then give it two driving lessons, of not more than half an hour each, daily in the ring, until you think you have succeeded in training it to carry its head correctly ; after which you may saddle it, and ride it in a field with a standing martingale on. Use the reins gently, and be satisfied at first if the horse makes no mistakes under the most gentle treatment before resorting to stronger and sharper pulls. Continue the use of the ringed martingale and the thick rubber bit for a considerable time after the termination of the above treatment.

The rubber snaffle bit is very useful in the treatment of an animal that will not take a " good hold " when jumping, and I have also found it answer admirably for colt-riding generally. The mouth of the colt is always more or less tender, and the rubber bit seems to irritate the animal less, and inspire it with confidence sooner, than any other bit.

Especial care should be given to the bitting of the hack for the road rider, as a finer and more sensitive mouth is required than is the case with the hunter. It is not by any means always possible to tell from the appearance of the bars of the animal's mouth whether it is a hard- or a light-mouthed horse. The apparent sensitiveness to the touch may be the same in both cases. The sole reliable means of ascertaining in any individual case is to note whether the animal bends, or comes back, to the bit when pressure is applied, or whether it fights and pulls against it. The kind of " mouth " the horse has is *solely* dependent upon the *kind of training* it has received, and a good mouth *cannot result* from the *constant pressure* of a *punishing* piece of iron upon the *sensitive gums.*

In concluding my remarks on this question of bits and bitting, I desire the reader to thoroughly understand that I have no prejudice against any particular form of bit except such as are obviously *cruel.* I maintain that such bits are *never necessary,* that they do not and cannot effect what is claimed for them, but that, on the contrary, they invariably make matters worse.

Bridles.—In the selection of a bridle, the only points to be considered are strength and neatness. Possibly there is nothing better than the plain stitched bridle, devoid of rein-buckles. This, however, is hardly as *safe* as one with stud fastenings, as the stitches on the reins seem to have a knack of becoming rotten all at once, and giving way when least expected. Sewn reins are much better to use with a martingale ; otherwise " stops " must be used, or the rings will catch on the rein-buckle or stud, which is not desirable. I have often thought that some new design of leather for reins would be welcomed—a leather with a rougher surface, involving less liability to slip, providing the reins could be kept clean as well as rough, and would not be slippery in wet weather, or clumsy to handle. I should never think of using spring-hooks either on bridle or reins. They are very readily broken, and, moreover, there is the possibility of the hook inflicting a nasty wound on the animal or yourself. I once saw a racehorse's tongue almost severed by a spring-hook attached to the end of a leading-rein ; the bridle had become twisted in some way or other, and the hook was pulled through the animal's mouth. A neat and handy bridle, equally so for a colt as for a horse, a quick one to fit, and one that can readily be altered when in the saddle, is one that has a buckle in the poll-piece, just between the ears, and no other buckles except one in the hand part of *one* rein and one on the throatlash.

Before leaving the subject of bits and bridles, I should like to make a few remarks respecting driving-nets and nose-straps, and other appliances of a similar nature which interfere, to a more or less degree, with the natural and free respiration of the animal. All such appliances are crude and barbarous in the extreme, and any one who uses them should be prosecuted by the R.S.P.C.A. Choking or stifling a horse is neither a scientific nor a humane practice, and is unjustifiable under any conceivable circumstances. If the reader thinks that I am indulging in exaggerated language with regard to this matter, let him put the method I am condemning to a practical test upon himself by having his own mouth hermetically sealed, and a light pressure put upon his nostrils. Then let him be compelled to run. He will not proceed far before he collapses for want of sufficient air, and will realize what it means for the horse to have its respiration impeded by such diabolical inventions as the driving-net and nose-strap. It should always be borne in mind that the horse *cannot breathe through its mouth*, so

that any compression of the nostrils necessarily causes great pain and distress.

With regard to the metal from which bits should be made, my preference is decidedly for a well-made, strong steel bit over any that is made of soft white metal. The only recommendation of the latter is that it will not rust if left uncleaned—a " dirty " recommendation at best. Soft metal stirrup-irons should also be studiously avoided. They bend readily, and are consequently most dangerous.

XENOPHON ON THE MANAGEMENT OF THE HORSE

I THINK the following rules, drawn up by Xenophon about 2,500 years ago, are of sufficient interest to warrant their reproduction here. They contain a lot of sound common-sense, and indicate that even in equine matters the ancient Greeks could give points to many modern Englishmen. Clauses 5, 9, and 10 are particularly interesting on this account.

"We shall now show how a man may groom a horse with least danger to himself and most benefit to the animal.

"1. If, when he cleans him, he looks the same way as the horse, there is danger that he may be struck in the face with his knee or his hoof.

"2. But if he looks in the opposite direction to the horse when he cleans him, keeping himself out of the reach of his leg, and rubs gradually down by the shoulder, he will thus receive no injury, and may clean the frog of the horse's foot by turning up the hoof. In like manner let him clean the hind legs.

"3. That the groom may put on the bridle properly, let him first approach the horse on the left side, and then throwing the reins over the horse's head, let him suffer them to rest on the point of the shoulder; and next let him take the head-piece in his right hand, and apply the bit with his left.

"4. If the horse takes the bit into his mouth, the man has nothing to do but put on the head-piece. But if the horse will not open his mouth, the man must hold the bit to his teeth and insert the middle finger of his left hand between the horse's bars. For most horses, when this is done, open their mouths. Should the horse, however, not even then receive the bit, let him press the lip against the dog-tooth or tusk, and there are very few horses that, on feeling this, will not admit it.

"5. Let the groom also be instructed in the following points: First, never to lead the horse by the bridle, for this practice makes horses harder

on one side of the mouth than on the other; and next to keep the bit from pressing on his jaws as much as possible, for if the bit rubs on them too much it renders the mouth callous, so that it loses all feeling; though, on the other hand, if it is allowed to fall down too much towards the front of the mouth, it gives the horse an opportunity of seizing the bit between his teeth and refusing to obey it.

"6. It is proper, however, that a horse should not be irritated by these matters when he has work to do, for so important is it that a horse should take the bit readily that one who does not take it is altogether useless.

"7. But, if he is accustomed to be bitted, not only when he is going to work, but when he is taken to his food and when he is being brought home to his stable after being ridden, it will not be at all surprising if he seize the bit of his own accord when it is held towards him.

"8. But never to approach a horse in a fit of anger is the one great precept and maxim of conduct in regard to the treatment of a horse, for anger is destitute of forethought, and consequently often does that of which the agent must necessarily repent.

"9. When a horse is shy of any object, and reluctant to approach it, the rider must try to make him feel that there is nothing terrible in it, especially to a horse of spirit; but if he cannot succeed, the rider must himself touch that which appears so alarming, and lead the horse up gently to it.

"10. As to those who force horses forward with blows in such a case, they only inspire them with greater terror; for they imagine, when they suffer any pain at such a time, that what they look upon with alarm is in some way the cause of it.

"11. When the groom brings the horse to the rider, we have no objection that he should know how to make the horse stoop, so that it may be easy to mount him; yet we think every rider ought to take care to be able to mount, even if the horse does not bend to him, for sometimes a different horse will present himself, and the same horse will not always be equally obedient to his master" (Xenophon's *Minor Works*, Bohn's Edition).

CURIOUS FALLACIES CONCERNING THE HORSE

IT is difficult for a thinking, intelligent person to realize what extraordinary fallacies are current respecting the horse in this enlightened age—not merely among those who have no practical acquaintance with the animal, but also to a large extent among professional horsemen. During my lecturing tour in Great Britain many such instances of amazing and amusing credulity were brought to my notice. Only quite recently (May 1904) I met a friend who knew that I was about to issue a new work on the Horse, and in the course of the conversation that ensued he remarked—with the air of one who knew that he was merely giving utterance to a universally-accepted truism—"Of course you know that *the eyes of a horse magnify seven times*, and that it is owing to this fact that man possesses his power over the animal." Although I was considerably staggered by such a remark from such a source, I simply replied by asking him whether, such being the case, the horse's eye magnified everything in the same proportion, and if not, why not. The question nonplussed him, and he soon perceived the absurdity of the magnifying idea. At different times I have come in contact with members of all classes of society who have expressed their belief in this remarkable theory, and among them, to my profound astonishment, a member of the medical profession and a veterinary surgeon, who ought at least to have known better.

Akin to the above delusion is the even more prevalent idea that the human eye exercises a controlling power over that of the brute. This idea, of course, originates in the fact that the animal-tamer invariably concentrates his gaze on the eyes of the animal when engaged in taming operations. But this concentrated gaze is for the purpose of anticipating any possible aggressive action on the part of the animal, and certainly not with any idea of subjugating it by the power of the eye. In fact, he does it for precisely

the same reason as impels a boxer to keep his eyes fixed upon those of his opponent, namely, to be fully on guard against a hostile attack, of which the first indication will be furnished by the eye. If any one doubts the truth of this, and still clings to the intimidation theory, let him attempt to annihilate any vicious brute by simply outstaring it, and he will be cured for ever of his delusion, and probably of everything else.

EVERYDAY MISMANAGEMENT OF THE HORSE

UNDER this heading I have enumerated a number of points which, I think, deserve the careful consideration of a large number of those who have to deal with horses. Some of the hints and advice may be deemed superfluous, but the almost incredible amount of ignorance I have seen displayed in the treatment of the animal induces me to think otherwise. Those who consider the advice superfluous will kindly assume that it is not intended for their edification, but for that of their less fortunate brethren.

The following are *things to avoid* :—

PETTING AND CARESSING the animal when it does what you do *not* want it to do, such as jibbing, and flogging it when it does what you *do* want it to do, such as starting. No mistakes are more common, or more utterly senseless, than these.

STRIKING A HORSE WHEN IT STUMBLES.—This is simply irrational abuse. It is obvious to everybody who will take the trouble to think a moment that the animal will not fall if it can help it. The proper thing to do is to look for the cause of the stumble. It is very frequently the result of a stone becoming jammed between the frog and the shoe.

WHIPPING A HORSE FOR SHYING.—This is silly, as it simply defeats its own object. The animal naturally associates the castigation with the object at which it has shied, and consequently becomes a worse shyer than before.

MISUSING THE WORD "WHOA!"—As I understand this word, its signification is, or rather should be, limited to the expression of a desire to bring the animal to a standstill. But many people use the word indiscriminately for everything they wish the horse to do or not to do. They use it when they walk up to it in the stall, when they walk away from it, when they lift up its tail to crupper it, when they put the bit into its mouth, and, in fact, when they do anything whatever in connection with it. Under the

circumstances specified, the correct word to use is, of course, "Steady!" The horse, being at a standstill, has "whoaed" already. If the animal could speak, what would it say when it receives such inconsistent instructions?

KEEPING THE ANIMAL WITHOUT SUFFICIENT WATER.—Water should always be kept in the manger.

VIOLENT DRIVING OR RIDING immediately after starting. This is distinctly injurious in every way.

WEARING SPURS AND USING THEM UNNECESSARILY.—Many animals do not require, and will not tolerate, the use of spurs. In such cases a touch of the heel is equally as efficacious as the spur, and involves no punishment or risk of accident.

RETAINING THE ANIMAL'S SHOES ON TOO LONG, from false ideas of economy.

HANGING ON BY THE REINS, to retain one's position in the saddle.

USING DIRTY COLLARS or harness.

DRIVING SINGLE-HARNESS HORSES in hilly country *without breeching*. Without the assistance afforded by the breeching the animal cannot utilize the weight or strength in its quarters to assist in holding back the trap, and the slightest stumble causes the whole weight to be suddenly thrown upon the withers and fore legs, and preclude any chance of recovery. The action of the weight of the trap on the dock by the crupper is a lifting one. The heavier the trap and steeper the hill, the greater is the lifting power, truly taking the horse by the "neck and crop" and trying to pitch it head foremost down the hill. This lifting power is accentuated by the fact that the weight on the fore feet of a horse going down hill is heavier than on the hind ones (this is *vice versa* when going up hill), thus adding greatly to the likelihood of accident.

PAIRING A GOOD SLOW HORSE with a good fast one for double-harness purposes.

USING BEARING-REINS on "made" horses, especially on "draught" animals.

USING CRUEL BITS to prevent bolting.

OVERLOADING.

STRIKING A HORSE TO MAKE IT START, and "clicking" afterwards. The "click" alone is intended to start it.

Everyday Mismanagement of the Horse

Driving from a fixed draught pull instead of from a swinging or moving bar, or from spring hooks.

Keeping horses well clothed in warm stables, and then allowing them to stand shivering for hours outside shops, etc., in the cold, unprotected by loin cloths.

Cutting the long hairs out of the ears. These hairs are specially adapted for protecting the ears from the intrusion of foreign substances, insects, etc.

Retaining a loin cloth on the animal whilst actually working it, instead of using it solely to prevent chill while stationary.

Using badly fitting saddles.

Stinting the supply of natural diet, such as carrots, etc., and giving too much artificial physic.

Constantly using bandages, wet or dry.

Keeping foals or colts continually in a loose box, thus predisposing them to acquire bad habits which ultimately develop into stable vices.

White-glazed tiles immediately in front of the horse above the mangers. These are injurious to the animal's sight.

Striking the horse with a fork or broom-handle to make it move when in the stable, instead of standing slightly back and speaking to it.

Imagining that bearing-reins are efficacious in holding up a horse and so preventing it from falling.

Dropping into the habit of habitually speaking sharply and harshly to the animal.

Omitting to examine the horse's teeth immediately it shows any indisposition to eat.

Allowing an insufficient supply of natural light in the stable.

Omitting to give sufficient water to a hunter, under the false impression that its " fit " condition would thereby be impaired.

Leaving a horse unattended in the street.

BAD HABITS AND VICES—THEIR CAUSES, PREVENTION AND CURES

THE principal bad habits or vices of the horse are: shying, rearing, kicking, biting or snapping, striking, and jibbing. Among the stable vices may be mentioned such habits as wind-sucking, crib-biting, etc., etc. Broadly speaking, the chief cause of all of them is *mismanagement*, in some form or other, at some stage of the animal's career. And this mismanagement is principally due to a misunderstanding of the real nature of the animal. I do not think for a moment that any horse is really *born vicious*. Temperament certainly *is* inheritable; and certain temperaments are much more predisposed than others to develop vices; but vice itself is not inborn. What is required in order to prevent the development of vice is a careful study of the temperament of the animal, and an intelligent adaptation of the training to meet the necessities of the particular case. This is precisely what, as a rule, is *not* done. The same undeviating routine is followed in every case, both in the training and in the cure of the vices when the defective training has produced them. For example, assuming that *disobedience* in some form or other is at the root of all bad habits and vices (which is literally true), some horses refuse to obey from irritability, or a passionate temper, and some from sluggishness, others from timidity. It is obvious that it is a mistake to apply the same treatment, both in *kind* and *degree*, to these different cases. Sometimes, too, a horse's apparent insubordination may be due solely to *inability* to do what is required of it, and then again this inability may be due either to lack of training or to some unknown physical impediment which makes it impossible to do it. Clearly it is imperative to ascertain the real origin of the bad habit, or vice, before any intelligent attempt can be made to cure it.

What may be termed general *stubbornness* in a horse is very largely due to defective mouthing and bending. Before a colt refuses to "go on" it invariably comes back "off" the bit, and will go in any direction but the

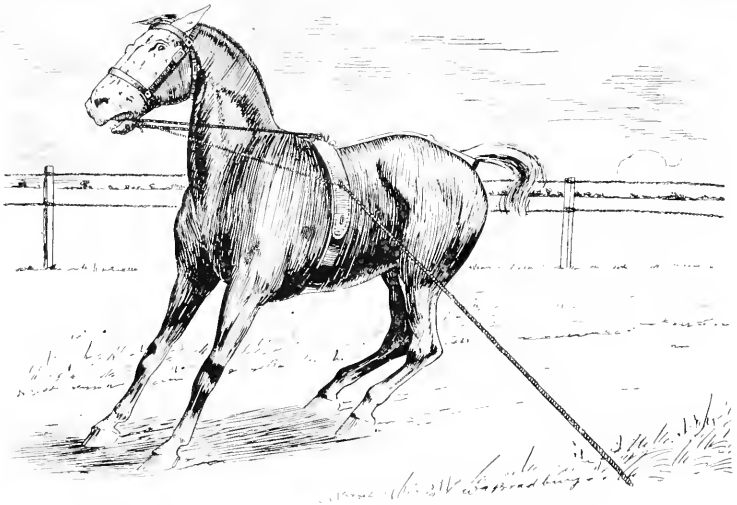

PLATE 31.—THE RUNAWAY TWITCH WHEN APPLIED.

Note.—See note at foot of Plate 30.

one which the rider desires to take. If much force be used, it at once takes to rearing. The best way to deal with an animal of this description is to "Galvayne" it, and follow with the "long-reins" treatment. This will nip the stubbornness and insubordination in the bud, and prevent the development of actual vice. It is only when the animal is *in motion* that a cure can be effected. This fact is recognized by those who practise the old system; they always felt that if the horse could be got to move somehow, it was a step in the right direction. But it was not always easy to do this by merely lunging, riding, or driving. By the "Galvayning" and the "long-reins" treatment it is effected with perfect ease. Whatever force may be necessary during the training of the animal to be obedient is supplied by the animal itself.

Nervousness is not actually a vice, but in some of its manifestations it bears a remarkable resemblance to it. In fact, it frequently renders an animal as dangerous as if it were really vicious, and it is more difficult to guard against accidents resulting from nervousness than from any particular vice which the animal is known to possess, and against which precautions can be taken. It is frequently the result of ill-treatment at some previous period of the horse's career.

I will now proceed to deal with the various bad habits and vices in detail.

Shying.—This irritating and dangerous habit usually results from one of two causes, namely, a naturally nervous and timid temperament, or defective eyesight. For the latter there is generally no cure. In any case it is a matter for the veterinary surgeon, and not the breaker, to deal with. All that can be done, apart from surgical attention, is to partially blindfold the horse by using specially constructed winkers adapted for that purpose, which may render it less dangerous to drive. On the other hand, if the habit originates in nervousness, much may be done to eradicate it. If the animal shies at small objects, such as bushes, pieces of paper or wood, heaps of stones, etc., or dark patches on the road, procure what articles you can of a similar nature and appearance and place them in the ring. Put the surcingle on the animal, and pass the long reins through the lower ring on the sides, to give you more control over it, and enable you to prevent it from "running off" the objects. The outside rein should not be much higher than the hocks. If round the quarters it will have a greater power of resistance. The horse should then be driven in diverse directions all over and about the ob-

jects until it takes no notice of them at all. As you are to abstain entirely from the use of the whip, the reins must be used very smartly, aided only by the voice. Do not allow the reins to get too slack, or the animal will double round, head on to you, and get twisted up with them and fall.

If the horse shies at objects of such a size and nature that they cannot be duplicated in the ring, such as trams, trains, etc., take it into some railway goods-yard, or engine-shed, and tie it up, with the hair-rope on, as shown in Plate No. 29. Take off the rope and drive it about in the yard with the long-reins, in the manner described above, treating it firmly but refraining from the use of any unnecessary force. Take the animal as near (or even nearer) to the objects which have alarmed it than it will have to go under ordinary circumstances. Subsequently, when using the animal, do not, as many do, keep away from the objects at which it has shied, but rather make a point of going in search of and near them, as the more frequently it sees them the less and less fear it will display.

Rearing.—This is invariably the result of defective training, and is almost always traceable to bad "mouthing." The first thing to be done is to mouth the horse by the use of the running reins (see "Mouthing and Bending"), followed by a thorough schooling with the "long-reins," working it both in open bridle and winkers (see chapter on "Manipulation of Long-Reins"). When it only rears at one particular thing, or in one particular place, the "long-rein" treatment should, if possible, be given at these particular spots. In the treatment of rearing you may use the whip smartly on the hind legs below the hocks with beneficial effect, if it should be necessary to do so in order to enforce obedience.

I have usually found the driving lessons, combined with a methodical training of the animal to obey the bit, sufficient to cure all ordinary cases of bit-jibbing and rearing, but in extremely stubborn cases (and confirmed rearers are generally of a naturally stubborn disposition) I have had to resort to severer measures, in the shape of the "rearing twitch." This is a long, strong cord, tied in a loop round the lower jaw (as in Twitch No. 2) and brought between the fore legs, through the ring on the lowest part of the surcingle, to the driver's hand, making, as it were, a third rein. I do not pretend that this twitch is an absolute preventive of rearing, but it constitutes a sharp reminder to the animal that it is doing wrong, and it does not take many of these reminders to effect a cure. This twitch can be adjusted

for use when driving or when riding (see chapter on Twitches), but it must be applied when the animal is in the act of rearing.

A third method I have also used with great success in the treatment of rearers is as follows: Fasten a light leather hobble, to which is attached a small pulley-block (see Plate 32, Diagram 19), round each fore-fetlock, attach two more single blocks to the ring on the belly-band of the surcingle, fasten a cord (about 30 feet in length) to each of these blocks and pass them through the fetlock blocks respectively, then up through one of those on the girth of the surcingle and back to the driver's hand—as a third rein (this method must only be practised in the ring). When the horse is in the *very act* of rearing, and before it has had time to come down again, pull each leg from under it, separately and alternately, to avoid any unnecessarily severe strain upon either of the legs by bringing the horse's weight upon it continuously. If it still continues obstinately to rear, pull both feet from under it simultaneously, and so bring it to its knees (it is understood that knee-caps will have been previously put on). It is advisable to commence this treatment with one cord only, moving the hobble from one fetlock to the other, in order to acquire facility of manipulation.

Before concluding my remarks on the treatment of rearers, I desire to revert for a moment to the importance of the schooling with the "long-reins," which should follow the mouthing process and *precede* any other treatment. It is also of great importance that the animal be compelled to "*back*" *perfectly* without rearing. To ascertain whether it will do this, make it back ten or fifteen distinct times a distance of two or three yards at a time. This will cause it to rear if it has still any inclination in that direction. If it should rear under this test, the lesson must be repeated.

Never, under any circumstances, pull a horse over *backwards*. It is a practice full of danger. I have, in fact, seen horses killed by it.

Should you ever chance to find yourself on a rearer, slip your right hand up the rein towards the bit, bring the horse's nose round towards your knee, and keep it there by forcing your right hand behind and tightly against the knee; with the same hand apply a good cutting whip smartly to the off quarters of the animal (still keeping the hand behind your knee), and at the same time use the off spur, compelling the horse to turn round until it staggers. Then apply the same treatment to the left side. Don't waste any time in temporizing with the animal: set about it instantly. With its head

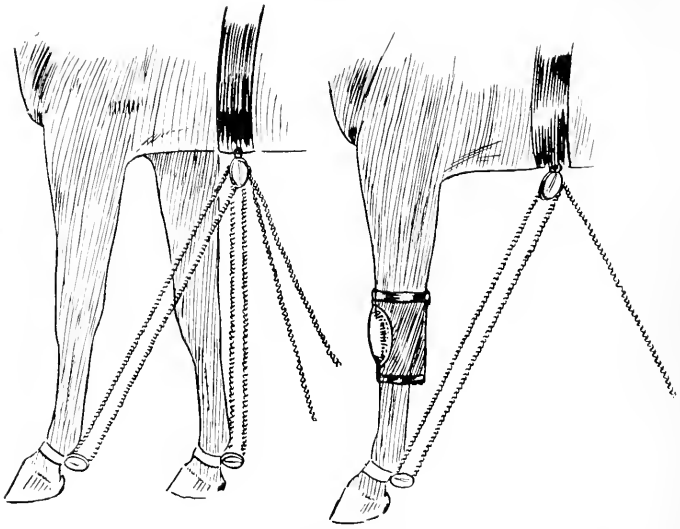

Diagram 19.
Showing how to fix the Cord and Pulleys on one or two Fore Legs; as used with Rearers, etc.

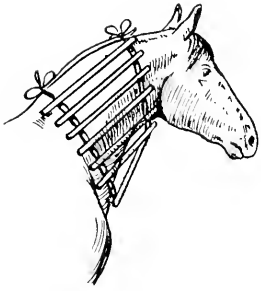

Diagram 20.
A Horse with a Cradle on.

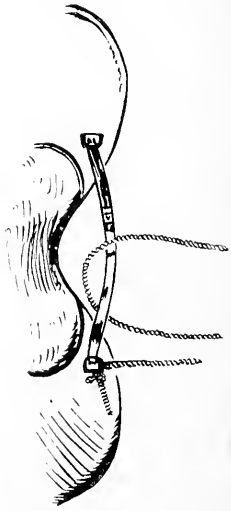

Diagram 21.
A Rearing or Runaway Twitch as fixed to the Saddle.

and nose in the position described, it is very unlikely that it will even attempt to rear, and if it does try, it is practically impossible for it to do so. It may, owing to weakness or lack of determination on the part of the rider, stretch out its legs and refuse to turn, but it will not be able to *rear*. As far as that is concerned the rider will be quite safe.

KICKING.—This is an extremely dangerous vice, and a confirmed kicker has no market value for harness purposes, however good it may be in other respects. Nevertheless, I can assure the reader that it is, as a rule, easier to cure this vice than it is to cure the habit of shying. The first thing to be done is to "Galvayne" the animal well. If necessary, hit it smartly below the hocks or knees with the whip, moderating the severity of the punishment in accordance with the temperament of the animal. Every time you apply the whip, give the command "Get up!" authoritatively, until it moves promptly, and shows less inclination to kick. Then take a "third hand" and handle the horse with it as explained in the "Art of Galvayning." But in doing this, refrain from working on the hind legs until you are satisfied that progress has been made, and that the animal shows less proneness to kick when touched than it did at the commencement of the "third handing." The idea of this "third handing" is to familiarize the horse with being touched in various parts of the body, and to teach it by experience that what is touching it is perfectly harmless. Generally speaking, a horse kicks far more because it is frightened than because it is vicious. Its object is to remove something from which it anticipates possible injury. The object, therefore, of intelligent training should be to inspire confidence, hence the utility of the "third hand."

Continue the manipulation of the "third hand" until you can rub the animal all over the body as far as the quarters with it without any indication of a disposition to kick. Then pass the "hand" down gently towards its hocks, by a series of slight, short rubs, going a little lower down with each rub. If, as you approach the hocks, any decided disposition to kick is shown, beat a temporary retreat towards the quarters; but it is never advisable to entirely remove the pole from the animal. After a little time recommence the series of slight, short rubs up and down the hind legs as before. Whilst you are working the horse in this manner, keep a close watch upon its eyes and ears, in order to ascertain, by the expression of the former and the movements of the latter, how much temper and insubordination

still remain. When you can apply the "third hand" in a reasonable manner to all parts of the body without evoking any indication of irritability, put an empty sack on the "hand" and again work the animal in the manner described in the chapter on "Galvayning," until you can throw the empty bags all over it, especially upon its hind legs, without the slightest exhibition of annoyance or alarm.

The time that the above treatment must occupy is necessarily a variable quantity, and must entirely depend upon the particular circumstances of the case. It may take half an hour or even two hours, a single lesson or two or three lessons.

You should now be able to put the surcingle and crupper on the animal without eliciting any inclination to kick, and, with an open bridle and long-reins, drive it as explained in "The Manipulation of the Long-Reins." When you are assured that you can exercise absolute control over the horse by the bit, the rest of the harness may be adjusted. Arrange the breastplate and breeching rather loosely, and allow the end of the traces (which should have been passed through the rings on the breeching, and fastened so as to prevent slipping) to flap about the hind legs and quarters. If the animal kicks at these, stop it instantly with the reins, and let it walk away again slowly. If, after doing this three or four times, it still persists in kicking, bring the "third hand" into operation again, and either back the animal with the reins until it ceases to kick, or make it remain still. Stand behind it and pull smartly, not violently, at each rein alternately whenever it lifts a leg or makes the slightest movement at the touch of the "third hand." At each pull say "Steady!" loudly and smartly. It is understood, of course, that the "third hand" is being manipulated by the assistant. As soon as a good result has been obtained, move the animal on again slowly; "third hand" it whilst it is moving, and let the trace ends continue to flap about it until no suggestion of a kick remains. Be careful not to *thrust* the "third hand" *into* the flanks. The horse has to be accustomed to the feel of it there, but it must only be used in the same manner as you would gentle it with your own hands—not as a lance.

If the horse shows renewed signs of kicking at this stage, namely, when moving, let the assistant put the "third hand" behind and on it, hold it at right angles to the quarters, and bring sudden and hard pressure to bear upon it there. He must hold the pole in such a manner that, if the horse should

kick and strike it, the blow will swing it away from him. He must keep his back towards the animal's head, with the pole in front of him, and, if working on the near side, his left shoulder towards the quarters ; if working on the off side, of course his right shoulder must be towards the quarters. While he is holding the pole on the quarters, make the horse back a few steps at a time by pulling the reins and exclaiming "Back!" This kind of treatment should be continued until a good result is obtained. Up to this stage you have only been working the subject at the stand, and at a slow walk. There should have been no undue hurry over any part of this section of the training, or it may turn out to have been labour wasted.

While at the "Steady" the assistant should use the pole *between* the hind legs, the flanks and the hocks, gently at first, then in a slightly rougher manner. This special treatment of the parts in question should also be given at the walk.

At this stage you should ascertain if the animal has bruised its legs or made them tender by so frequently striking the "third hand." If it has done so, cease the lesson at once. If not, proceed to do, at the trot, everything you have previously done at the stand and the walk—the assistant at first running behind the animal, and holding the pole between its hind legs in such a manner as *not* to strike them roughly. He must also touch and rub the outsides of the legs occasionally. If the horse does not kick at this, attach a pole to its side, in such a manner that it will trail on the ground at the side and touch the hind legs as the animal trots on. After a time fix another pole in a similar position on the other side. Both poles will now be trailing in such a way that the hind legs will always be in contact with one or the other (see Plate 24). As soon as the horse's behaviour is satisfactory under this test, lift up one of its hind feet and push one of the poles so that it will *trail between* the hind legs. If the animal takes this test quietly, lift up the other foot and push the second pole under. Both poles will then be trailing in the position illustrated in Plate 25.

I have occasionally had as many as four poles trailing about the horse's legs at the same time, until it has quietly and carefully lifted its legs over each of them, to avoid touching them, but without evincing the slightest annoyance or alarm at any accidental touch. I do not, however, advocate the use of as many as four poles in the ordinary application of this treatment.

You must be careful not to continue the pole treatment long enough

to cause the animal's legs to become tender, or you will undo the good you have done. All "third hand" treatment should be graduated carefully: first it should be *very* gentle, then gentle, and finally slightly rough; but never rough enough to inflict the least pain or injury. As soon as ever pain is caused, the horse will naturally and justifiably kick to protect itself from injury. When it will allow the poles to remain in the positions indicated for a few minutes at a time, without showing a disposition to kick, your object is accomplished, and the lesson should be terminated.

Many originally confirmed and inveterate kickers are now working quietly in harness through an intelligent application of the treatment outlined above. One horse I had to deal with was such an extraordinarily vicious and determined kicker that the short training I gave it with the long-reins could only be effected by working it *backwards*. I had previously "Galvayned" it, but I had to remove the long-reins and return it to the "Galvayne" position, still keeping the harness on. After working it patiently with the "third hand" until every test failed to evoke the least indication of vice or insubordination whilst it remained in that position, I again put on the long-reins, and worked it with the poles attached in all positions, having eventually four trailing at one and the same time. I then caused Chinese crackers to be exploded in all directions about it, and tins filled with stones to be rattled in its immediate vicinity. The horse still remained quiet amidst the loud and incessant noise, and I finally sat upon its hocks and discharged the six chambers of a revolver. It still remained absolutely quiet, but its quietness was not produced in any way by exhaustion, as was proved by its being immediately afterwards harnessed into my single brake and driven about the field, subsequently driven in an ordinary cart through the town, and then by the owner to his home some few miles away.

Of course a horse may kick from any one of a number of different causes, but, generally speaking, the habit is either due to the fear and annoyance caused by being touched unexpectedly behind, or from alarm at sudden and unusual noises. The treatment described above is for the cure of the former. The cure of kicking from alarm at noise is dealt with fully in the chapter on "Educating the Colt to Stand Noise."

When the application of a twitch is required, No. 1 Twitch (see Plate 60, Diagram 64) is quite as reliable as a preventive of kicking during grooming or clipping as the old-fashioned one, and has the additional recommendation of

causing no pain. No. 2 Twitch is equally good and effective, and has this advantage over No. 1, viz., that it can be adjusted and applied before work is commenced, so dispensing with the necessity for an assistant. (See Plates 27 and 28, also the chapter on "Twitches.")

Plates 43, 44 and 45 illustrate methods of handling the hind legs of a kicker for shoeing purposes. The first-mentioned Plate shows how both the fore and hind legs can be restrained, so that this method is useful for either a striker or a kicker. To affix the rope, slip a cap under the halter over the eye, on the same side as the leg upon which you intend to adjust the rope, and apply No. 1 Twitch. Take a strong rope about five or six yards long, with a small loop at one end, and make it into a running noose large enough to go over the foot ; induce the horse to move so that it will put the desired hind foot into it ; then pull the noose tightly round the fetlock. If you desire to restrain the other leg also, make a loop on the ground and manipulate it in the same way ; then pass the rope over the back near the withers, take a couple of turns round the fore arms, and finish off by taking in the rope leading to the hind legs in the last turn—holding it as shown in Plate 43. It is best, however, to secure only *one* of the hind legs at a time. A shake or two of the tying-rope will release the leg, or legs.

Plate 44. This position is effected by first securing the fore legs with a running noose, passing the rope through one of the rings on the top of the surcingle, then backwards, and securing the leg by a turn of the rope—holding the latter as shown in the Plate.

Plate 45. Fix the tail-cord on (see Plate 7, Diagrams 7 and 8), make a half hitch round the fetlock as already described, pass the rope through the loop of the tail-cord, and manipulate the leg as shown in the Plate.

Stable-Kicking.—This is a very unpleasant habit and a nuisance to all within hearing, as a stable containing "stable-kickers" is never quiet. The habit usually originates in irritability, which is sometimes traceable to sexual causes. In any case the best thing is to put the animal into a bale stall, and mats should be fixed on the hanging bales to mitigate the noise from kicking. Every time the animal kicks and strikes the bale, the latter will swing back against the quarters. This in itself will frequently suffice to effect a cure, as the horse soon gets tired of the business and ceases to indulge in futile kicking.

If, however, the animal is a sly and dangerous kicker, and habitually

tries to strike any one approaching it, the following will be found an effective remedy. Suspend from the ceiling a long bag of hay, in such a position that, when hanging perpendicularly, it will clear the floor by about a foot and a half, and be about two feet to the rear of the horse's quarters. Every time the bag is kicked away, it will swing back again and come in contact with the animal. The latter will tire of kicking long before the bag gets tired of swinging. I have cured many confirmed and dangerous kickers by this simple method alone, and have also used it with good results on nervous and wild horses.

Another very effective method, which I have practised for many years with success, is as follows: Put on the surcingle (see Plate 33), fasten two cords to the front ring of the nose-band on the head-collar, pass them through the rings on the hip strap, also the lower rings on each side of the surcingle, and fasten them to light hobbles or straps round the hind fetlocks. If the animal only kicks with one leg, it is only necessary to put a cord on the kicking side. It has been suggested to me, when I have been explaining this method, that it might be more effective if the cord were tied to the bit instead of to the nose-band. One person even suggested tying it round the lower jaw. This, however, would be a very dangerous practice. Probably the first kick made by the horse would result in a fractured jaw.

In summing up my remarks on the treatment of kickers and kicking generally, I desire to make clear the fundamental difference between the old methods and my system. The former aimed at curing the animal by the application of painful force and by exhaustive processes, or at rendering the kicking harmless by such mechanical appliances as kicking-straps, etc. The "painful force-cure" fails because it naturally excites the resentment of the animal, and the mechanical appliances are of course quite useless as a *preventive* of kicking, however useful they may be in an emergency. On the other hand, my system is designed expressly to teach the animal that there is nothing to kick for, and so to eradicate the desire to kick. Experience, as well as common sense, has abundantly demonstrated that the latter method is infinitely the better in every respect.

Biting or Snapping.—This is a habit originally caused by irritation, and it rapidly develops into a confirmed and dangerous vice. Probably the most frequent cause of the irritation is improper grooming. The most gentle treatment is essential in the cases of animals with sensitive skins; any rough

application of such tools as the dandy-brush, the curry-comb, or a harsh straw wisp, must produce great annoyance and irritation.

A "snapping" biter, as distinguished from a vicious one, is not really dangerous, but the habit is very disagreeable and immediate steps should be taken to extirpate it. An ordinary cutting riding whip is not a bad corrective in the first place. A smart cut with it should be given on the nose of such an animal directly it turns its mouth towards you. If it is being really carefully groomed, is in no way irritated by the process, and still endeavours to bite or snap, apply No. 2 Twitch, in the manner explained in the chapter on "Twitches" (see Plate 27). This appliance is not merely a preventive method, but also a curative one.

As a preventive measure, purely and simply, the groom can always protect himself by tying the horse's head close to a ring placed high over the manger, or elsewhere in a similar position. But if this be done, the groom should refrain from provoking the horse by any roughness.

Handle the "biter" frequently about the mouth, and make a point of giving it a bit of something to eat whenever you approach it; but do not play with it. Playing with or teasing the horse usually develops a more dangerous and vicious style of biting.

Stallions kept solely for service purposes, and confined principally in loose boxes, are particularly liable to develop a habit of biting from pure savageness. The main cause of this is lack of sufficient exercise. This is proved by the general docility of stallions which are kept in constant work.

Some geldings are quite as savage biters as stallions, both in the stable and out of it. When at work, such animals should always be muzzled, out of consideration for public safety. A safe method of affixing the muzzle, if the animal is in a stall, is as follows: Have two shanks to the head-collar, and pass each through one of the partitions on each side of the stall. The shanks must be long enough to admit of the animal's head being pulled tightly against either partition. The head can be retained in that position by knotting the shank, and the muzzle can then be adjusted in safety. It should be affixed *under* the head-collar, to prevent it from getting rubbed off.

Another preventive method of dealing with a vicious biter stabled in a stall, is as under:

Fix a strong staple, or a pulley block, to the extreme manger-end of the right-hand partition, above the line of the animal's ears, fasten a strong

cord to the nose-band of the head-collar, pass it through the pulley or staple, then bring it back and tie it to the stall-post, ready for use. Before going alongside the animal, pull its head close up to the block and fasten the cord securely to the stall-post. It is possible, of course, to fix up a cord on both sides in this manner, if necessary.

Cart horses often become dangerous biters, solely on account of the habit their drivers have of savagely jerking at the bit to force them to back very heavy loads.

Whilst a biter is being groomed or handled in any way, a continued application of No. 2 Twitch will in time effect a permanent cure. (See chapter on "Twitches.")

STRIKING.—This is a tricky and dangerous habit, easily acquired and quickly confirmed. One does not usually expect to find it in "made" horses, and it is the more dangerous on that account when such horses are afflicted with it, as no precautionary measures are considered necessary.

American horses imported into this country are often most expert strikers—the natural result of early ill-treatment, viz., lassoing, choking down, etc., etc. Such an animal never entirely forgets the rough treatment it has received, and is always more or less liable to strike out in self-defence. In England, the common method of teaching colts to lead is a fruitful cause of "striking." Striking and halter-breaking, too, are often closely connected. If the halter-shank at any time becomes strained, the horse becomes alarmed, commences to strike, shakes its head violently, and pulls back, sometimes so vehemently that it seems certain it will either pull its head off or at least break its neck. Another prolific cause of striking in the colt is the fixing of the bit too high up in the mouth—when the mouth is tender and sore—in combination with tight mouthing-reins. The colt naturally strikes at the spot where the pain is felt, in order to remove the source of it.

Before attempting to cure the vice it is important to ascertain whether it results from pure "cussedness," generated probably by abuse, or whether the striking is due to any physical pain the animal may be experiencing at the time. Not omitting to take such precautions as will prevent the horse from striking you, examine the jaws and head for wounds, swellings or abscesses, the inside of the mouth for signs of injury or for the presence of foreign substances between the teeth, the insides of the cheeks for possible lacerations caused by irregular and serrated outer edges of the molars, and

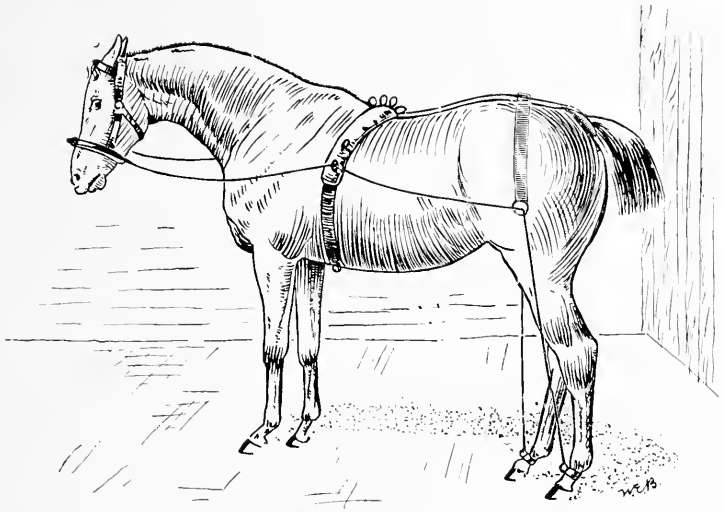

PLATE 33.—THE AUTHOR'S METHOD OF CURING A KICKER IN THE STABLE.
(One which amuses itself by constantly striking the partition.)

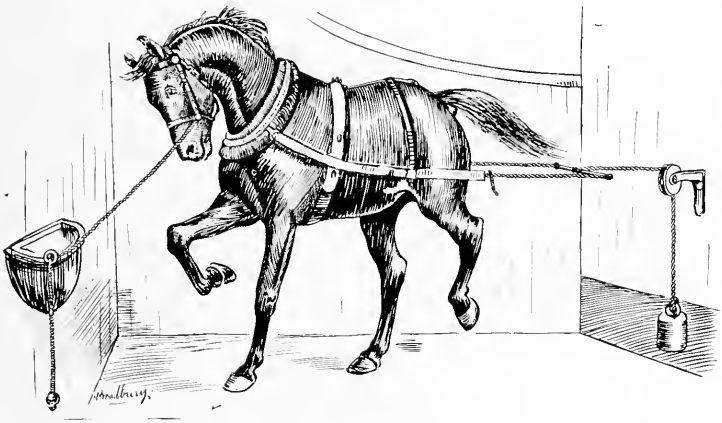

PLATE 34.—TRAINING A CONFIRMED "JIBBER."

Note.—An old or straw collar can be used. If the animal persists in running back, put on the hair rope (see Plate 12), make it pull back once or twice, and take it off.

look in the manger for "quidding," which is frequently the result of toothache. Should any of these sources of pain exist, the obvious thing to do is to remove them. If you find none of them present, you may conclude that the vice is the result of previous abuse, or of a naturally nervous or spiteful disposition.

The first curative step to take is to "Galvayne" the horse. Then "third hand" and "bag" it well, particularly in the front part (see "Art of Galvayning"), until all signs of striking have vanished. Then loosen the "Galvayne" strap entirely, and handle the animal all over its fore part and legs with your hands. Should it strike, repeat the "Galvayning" process.

When handling bad emergency cases under special circumstances, where there has been no convenience for "Galvayning" the animal, my plan has been to hobble the two fore feet together, connecting each with a separate cord to the ring on the bottom of the surcingle, and arranging the length of the cords so as to give very little play. Fixed thus, the horse is unable to strike, and whatever is desired to be done at the time can be done in safety. Or, I secured the animals as shown in Plates 43 or 44.

The above methods may be made curative, as well as preventive, by occasionally giving the horse a piece of carrot, sugar, or bread, etc., whilst handling it when secured.

Jibbing.—This is probably the most difficult of vices to permanently cure. Perhaps the commonest cause is temper, aggravated by *defective* mouthing. Other possible causes are mismanagement while being broken to a vehicle, sore shoulders, patting, caressing and making much of the animal *when jibbing*, and flogging it when it *moves on* (obviously both these proceedings are entirely irrational and simply calculated to perpetuate the habit); or lack of sufficient patience and skill in inducing a "collicky" horse to start. By a "collicky" horse I mean one that is "collar proud," through having been kept too long in the stable or out of harness, and which dances and fidgets about, refusing to take the collar and go straight away. In a case like this, lack of knowledge and discretion on the part of the driver may turn an animal which is *naturally* a willing worker into a "jibber."

Of all vices, jibbing is the most trying and annoying to have to deal with. The rider or driver of a jibber gets no sympathy from the onlookers in his attempts to make the animal move. His efforts simply evoke remarks

and advice of a satirical or ironical nature, which are not calculated to soothe his already irritated feelings.

The proper curative treatment is to "Galvayne" the animal well, and make it learn by experience that it must move promptly every time you say "Get up!" emphasizing your command at first by a smart application of the whip on the legs. When it moves immediately at the usual vocal command alone, unfasten the "Galvayne" strap, put on the surcingle and the rest of the harness with an open bridle, fasten the traces to the breeching (not too tightly, as they should be taken up from time to time), re-fasten the "Galvayne" strap, and proceed with the "Galvayning" as before—gradually tightening the traces so as to bring a fairly heavy pressure on the shoulders and quarters. Make the animal thoroughly realize from experience that it *must* move promptly when told to do so; when it does this satisfactorily, unfasten the "Galvayne" strap, and put on the long-reins, slackening out the traces so as not to exercise any pressure on either the shoulder or quarters, and allowing the breastplate and breeching to remain loose. Work the animal methodically and judicially with the long-reins, using a four-ring snaffle (see "Manipulation of Long-Reins"), and continue to so work it until it will stop, start, turn, and back, perfectly. Start it and turn it to the right simultaneously, then stop it, and repeat the starting and turning to the left, until it is as perfect and obedient in every respect as a well-trained soldier.

A jibber invariably dislikes being compelled to back by the reins, but it must be made to do so—although only a few steps at a time. Don't allow it to *run* backwards, but simply to walk backwards a few steps and then stop promptly at the word "Whoa!" (See "Manipulation of the Long-Reins.") Work the jibber with the "third hands" and train it to carry them the same as you would in the case of a kicker.

I have found, when dealing with an animal of a jibbing disposition, that when it discovers you are getting the upper hand and enforcing obedience, it will suddenly change its tactics, and commence to kick. This I always regard as a good omen. I therefore make it a rule, after the "Galvayne" and "long-reins" treatment to work a jibber much as I would a kicker. When working it with a pole on each side, to represent a pair of shafts, let the assistant hang on them—not by a dead pull, but on the "give and take" principle. He must not try to pull the animal back, but encourage it to

withstand the strain on the collar until it will pull against his entire weight and strength, either when standing still, starting, or moving.

At the termination of this treatment the animal should promptly obey all commands and no longer jib in any sense of the word. It may now be harnessed to a very light vehicle and worked carefully for a day or two without any increase in the weight behind it.

If, after one treatment on the lines indicated above, the animal still refuses to work in the vehicle to your satisfaction, repeat the lesson ; then slacken the traces somewhat and attach the animal, by a short rope from the centre of the breeching, to a small log (such as you can easily pull about yourself), and place its food and water in small quantities in different parts of the ring, as far apart as possible, so that it will be compelled to pull the log from place to place to satisfy its hunger. The use of the log at this stage is better than tying the breeching to the shoulder as before, as friction on the quarters is thereby avoided.

I have had occasionally, when treating extremely bad cases of jibbing, to resort to various devices to save time and labour. For instance, I once became the unfortunate owner of a notoriously bad animal, one which had been sent from a breeding station at Bourke, N.S.W., to Sydney, for sale. This beast was not only a jibber, but also a bucker, kicker, striker, and biter. Several times it made determined attempts to worry me whilst I was handling it. I ultimately mastered it in the following manner : First I gave it a lesson in the ring, then harnessed it to a long-shafted brake, without bit, reins or winkers, and turned it loose in one of my paddocks. For a long time the animal stood like a wooden horse ; then, getting tired of inaction, it threw itself on the ground, violently and repeatedly. After a time it abandoned this particular form of enjoyment for another, namely, that of stiffening its legs and falling over sideways, as if trying to smash in all its ribs. It soon tired of this amusement also, and relapsed into a condition of masterly inactivity—standing like a statue, apparently quite oblivious to the attacks of the myriads of flies which settled upon every part of its body, attracted by the presence of dried "sweat." When about half of a blazing hot day had passed I thought it advisable to offer it a drink, and therefore placed a bucket of water about six yards in front of it. It simply moved its ears in a slow and sullen manner when I placed the bucket down, but beyond that made no move whatever. It remained standing, to all appearance as indifferent as ever to its surroundings.

I left it for a time, and on my return found that it had drunk the water and was standing, apparently in the same mood, about 100 yards away from the bucket. I did not attempt to give it any further training, but simply refilled the bucket and placed it where it was before, leaving the animal standing harnessed in the trap. The next morning I visited it and found that it had again drunk the water, and was grazing some 200 yards away. It was evidently still in a sullen and defiant mood. However, by way of a test, I put on the open bridle and reins, and succeeded in driving it round the paddock, taking the precaution, every time I stopped it, of having its head down hill, so that in starting it would be easier for it to go forwards than backwards, i.e. easier to do right than wrong.

I kept it harnessed in the trap for several days and nights (no hardship, as the nights were warm enough there) giving it food and water and allowing it to graze at will. At the termination of its training and taming I am pleased to say that it had not a mark or scratch upon it worthy of notice. I drove it regularly every day, generally using an open bridle, instead of the ordinary bridle—although as a matter of fact it worked well in either.

I am well aware that in the majority of cases it would be impossible for the reader to put an animal through the course of treatment described above, for obvious reasons. But, when treating a stabled horse, after the lessons in the ring, the following method will be found a very good substitute: After putting the harness on, fix a rope to the breeching and pass it over a pulley block or wheel with a weight attached to the end of it (see Plate 34). The length of the rope must be so arranged that the animal will be subjected to a *constant* pressure on the collar, and obliged to lift the weight by pulling when it has to approach the manger to obtain food or water. If it persists in running back when it first feels the pressure on the collar, put on the leading-rope and tie the animal to the manger.

The above rigorous (but still humane) treatment need only be resorted to when all others have been adequately tried and have failed to produce a perfectly satisfactory and permanent result.

Should you find yourself in a vehicle behind a jibber, your aim should be to make the animal as uncomfortable as possible, and never to give it a moment's quietude. Make it perpetually do *something*. If it takes to running backwards, either get down and back it from the ground, or make it back by means of the reins in the usual manner from the trap; but compel

it to do this in the direction in which you want it to go. Continue this until the animal is thoroughly sick of the business. It will indicate that it has had enough by snatching at the reins, shaking its head, pawing, etc. Then turn it round, with its head in the proper direction, and exclaim sharply, "Get up!" If it still refuses to go forward, turn it round again and resume the backing process. Don't use the whip at all *when its head is in the right direction*, and *never pat it when it is doing wrong*. These mistakes are exceedingly common, and nothing can be more senseless. The object ought to be to make matters as uncomfortable as possible for the animal all the time it is doing wrong, and *vice versa*.

If, as is possible, you chance to have got hold of an animal that will not move anyhow, make it stand on three legs, or worry it by drawing the bit through its mouth from side to side, not violently but simply so as to irritate it. Cold water suddenly dropped or squirted into the ear will often prove effective in making it start. Adopt any expedient, in short, to irritate it or annoy it until it makes a move, but do not go far enough to cause it to retaliate in a violent and dangerous manner.

In dealing with a jibber in saddle, the only thing you can do is to take a short hold of, say the right rein, pull the animal's head tightly round towards your knee, and force the right hand close behind and against it, still retaining a firm hold of the rein. Then turn the animal round and round as quickly as you can until it commences to stagger; the instant it does this, pull its head round to your left knee and swing it round to the left—practically "Galvayning" it from the saddle. Repeat this as often as the animal jibs.

Another effective way of dealing with such an animal (if circumstances permit) is to dismount and take it into a field, securely fix one of the stirrup-irons by running it up the leather as far as the buckle and knotting the stirrup-leather below, pull the reins over the horse's head and tie them to the stirrup-iron—of course, making the one on the same side short enough to bring the head well round—then, with your hunting-whip, remind the animal of the meaning of the words "Get up!" (see "Art of Galvayning") and remount at once.

Horses that "Strike" when being Bridled.—Before attempting to bridle such an animal, turn it round in the stall, put a rope halter on, retaining hold of the shank in your left hand, and pass the end of a walking-stick *gently* between the bars of the mouth, from one side to the other (a smooth,

round-ended stick only is suitable for this purpose). Immediately the stick is in this position, run it far enough through to bring the already opened mouth of the animal to the centre of it. Remove the halter, slip in the bit and pass the bridle over the head. The bridle should previously have been arranged to a larger size than will be necessary when it is on. I often think the habit of "striking" may sometimes be caused or aggravated by the habit of neglecting to arrange the bridle so that it can be put on without undue force, and so avoid the clumsy dragging of the ears under the poll-piece, etc.

Another method of bridling a striker when in the stall is as follows: Turn the horse round, throw the halter-shank over the right-hand side partition, and pull the animal's head close to the stall-post, terminating by taking a clove-hitch round it. The bridle can then be adjusted without danger, and the halter slipped off afterwards without the trouble of removing the bit. This is effected by passing the head-piece and nose-band down the face, through the mouth, first over the bit, and then under it.

Wind-sucking and Crib-biting.—These habits usually go together, but not always. Some horses only wind-suck when in the stable, some only when out of it, and some only when in harness. The probable causes of both habits are idleness and bad companions—principally the former. Some authorities say that they are both due to a disordered stomach, but I do not think this is so. One imagines that if such were the case the cure would be simple. But, so far as I am aware, veterinary science has failed to find any specific remedy.

Personally, I do not think there is any known absolute cure for the habits when once developed and confirmed. If the animal wind-sucks only when the bit is on, use a hollow one. This will not prevent it from going through the action of wind-sucking, but it will prevent it from swallowing wind. Do not leave the wind-sucker tied up to the manger after it has finished feeding. It is better to put it on the pillar-reins, or keep it in a loose box containing as few projections as possible, without a fixed manger—feeding it off the ground by placing its food on an empty sack.

The best *preventive* of the habits is undoubtedly a plentiful and permanent supply of rock-salt in the manger, as the animal will lick this and so have no inducement to acquire the vices. A strap, tightly drawn round the neck, is generally recommended, but I do not like the idea. To be effective, the strap has to be drawn so tightly that it may cause injury. An occasional

application of Twitch No. 2 is a sure preventive, and may result in a permanent cure (see Plates 27 and 28).

Boxing colts up during the whole of the winter is undoubtedly a fruitful cause of wind-sucking. It is also a mistake to use new, unpainted deal wood for stable fittings. The horse will gnaw this, and in doing so is very liable to acquire one or both the habits.

Horses that will not Lie Down in the Stable.—The principal cause of this is nervousness, especially in the case of heavy horses. Always keep such an animal in as large a box as possible, and change the bedding previously used to either peat-moss, sawdust or straw, etc.—first trying one and then the other. Give it two or three days' extra hard work, feed it well *out* of the stable, bring it home late, when the stable is quiet, and turn it loose in a roomy box, with straw up to its hocks and knees. If these measures fail, and the animal is a heavy one, attach, up to 7 lb., a weight securely to its tail at night, in such a manner that it will not reach the hock by about two to four inches. The strain of a weight tied thus compels the animal to lie down to ease itself.

Another method is to tie up one of the fore legs, having previously put knee-caps on. Do this when the horse is tired, and see that there is a plentiful supply of bedding down. The animal will soon be tired of standing, and lie down.

Another plan is to take the horse into a riding-school, and train it to lie down by my system, i.e. pulling the head round to the surcingle. After three or four lessons it will lie down immediately its fore-leg is tapped with a whip and its head pulled slightly round to the side.

Hanging back in Stable and Halter-breaking.—The principal cause of this is that the flooring of the stall is too high in the fore part in comparison with the back. A horse *cannot rest* if its fore feet are higher than the hind ones. Hence the pulling back to obtain a change of position, which soon develops into halter-breaking. The level of the flooring should be rectified and made so that the animal will be able to stand naturally and rest comfortably. There will then be no inducement for it to hang back on this account. There is another point, too, which deserves attention. As is well known, it is the usual thing to erect stall-partitions much higher at the head end than at the rear; but the high portion is not carried *sufficiently* to the rear, so that the horse, by hanging back, is able to get its head

over the lower portion and play with its neighbour in the adjoining stall. This is a matter which should be rectified.

A rope fixed across the end of the stall so that it will come in contact with the quarters will prevent hanging back. But to *cure* the habit, put the hair-rope on. After one *strong* pull back, put a chamois leather round the portion under the tail, to prevent excoriation (see Plates 11, 12, and 29). It is best to train and test the animal outside the stable, and fix the chamois leather on the rope before tying the horse up in the stall.

Horses that Tear their Clothing.—I believe that the chief cause of this habit is a very simple one, viz., itching. The clothing prevents the animal from biting the itching part, hence it bites and tears the rug instead. The best preventive, in my opinion, is to thoroughly sponge the parts with a disinfectant or dip. Give the animal a laxative diet, such as green food bran mashes, etc., and follow this treatment by using a linen rug next the skin ; if greater warmth is required, put on a woollen one outside.

There are, I believe, some good and ingenious inventions for preventing the habit, notably one which consists of a hanging arrangement made of chain, to be suspended from the back and sides of the nose-band in such a manner that when the horse turns its head round to get hold of the clothing with its teeth, the chain appliance prevents it from doing so. Some recommend and use a muzzle as a preventive, but I do not like these for sanitary reasons, and have used them as little as possible for any purpose.

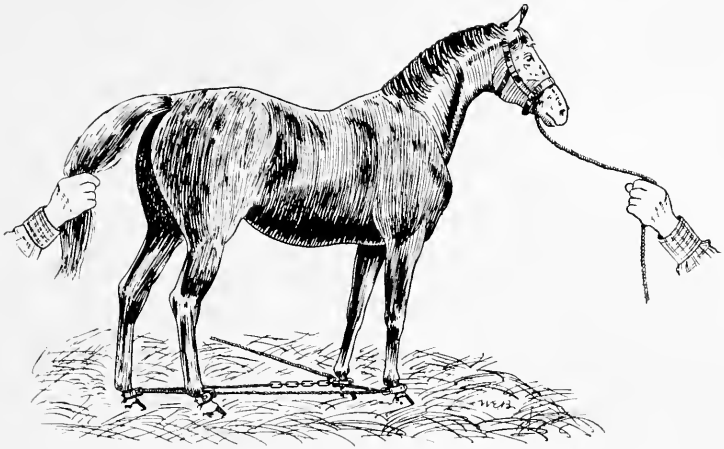

PLATE 35.—A HORSE PREPARED FOR THROWING WITH HOBBLES.

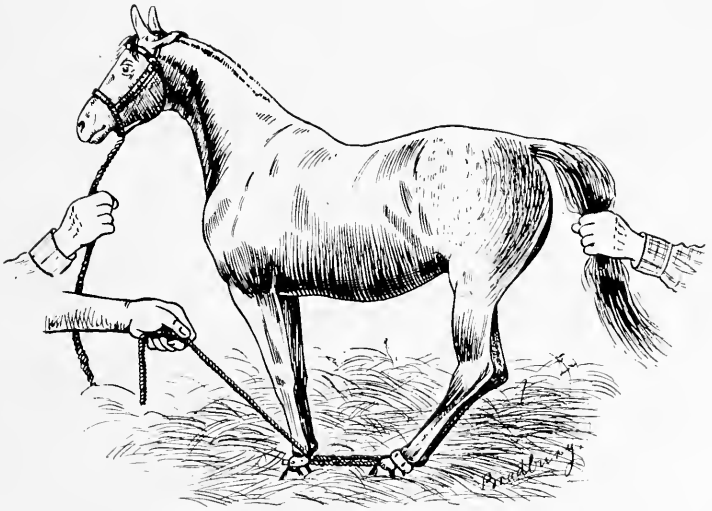

PLATE 36.—THE HORSE JUST ABOUT TO FALL, WHEN BEING THROWN WITH HOBBLES.

THROWING

THE method generally taught in Veterinary Colleges, and usually adopted in veterinary practice in Great Britain, is the one involving the use of "Hobbles" (see Plates 35 and 36). In my opinion it is attended with grave disadvantages. In the first place it involves the services of quite a number of assistants, whose presence directly tends to terrorize the animal, and, secondly, it is not effective in preventing the horse from struggling violently and dangerously, both whilst in the act of being thrown and when it is actually down. Moreover, the "hobbles" are expensive, and in the case of small animals I have found them extremely clumsy to use. I have thrown many hundreds of horses, and tried every known system, but my experience has led me to the conclusion that the "hobble" system is the least satisfactory of any. My own methods, which I will explain in detail in due course, are free from any of the drawbacks enumerated above. Whereas the "hobble" method necessitates the presence and assistance of at least five men, any one of my systems only requires the services of one—the actual thrower. With the "hobbles," the animal is *thrown* down with violence, and one or two men must kneel upon its head to *keep* it down, hurting it, and frequently causing it to struggle so violently that there is a strong possibility of its back being broken. With my system, the head of the horse is tied upwards and round to the surcingle, which prevents it to a great extent from struggling, does not hurt it, and renders injury an impossibility. Then, again, as regards expense, the cost of "hobbles" is a considerable item, whilst the throwing can be effected in an emergency by my method with nothing beyond a simple piece of rope.

However, before proceeding to explain my own methods of throwing, I will, for the benefit of any reader who might decide, for any special reason or under any special circumstances, to use "hobbles," say a word or two as to how they should be used. In the first place he should practise the arranging of them on a very quiet horse. Care should be exercised in placing and ad-

justing them so as to have the chief "hobble" on either the off or the near side fore-pastern, according to the side upon which it is desired to throw the animal. All the buckle ends of the straps should be on the outside. The throwing is effected by the pulling tight of the chain which passes through the D on each "hobble," causing the horse's feet to be forcibly bunched together, and so bringing it with some violence on its side to the ground. Immediately the animal is down, the spring D shackle is passed through each "hobble" and the limbs are thereby secured to a limited extent.

I will now describe my ordinary method of throwing a horse, which involves the use of a surcingle and crupper. First put on the head-collar and buckle the nose-band rather tightly, low down, then adjust the surcingle and crupper; next pass a "Galvayne" strap through the side-ring on the surcingle on the off side (that being the side upon which, in this case, the animal is to come down) and under the arm of the off fore leg; tie with a single bow-slip-knot to the ring at the end of the strap, and slip it round so as to bring the bow on the *inside* of the fore arm and close to the elbow. The object of the strap is to prevent the surcingle from slipping round. This is an important thing, as, should the surcingle slip, it may be difficult to make the horse lie down. Now get the throwing rope (which should be pliable and not too thick), fasten one end of it to the second ring from the front on the top of the surcingle, pass the other end of it through the *near* side cheek-ring on the head-collar, from outside to inside, then through the foremost top ring, from front to rear. Tie up the off fore leg in such a manner that the strap will not permit of any play of the knee. This is important, and the best way to do it is to take a strong strap, about 4 feet in length (a stirrup leather will answer admirably), place the buckle upside down (the tongue being on the lower side, pointing towards the body, and on the inside of the pastern), take two turns round the pastern, then bring the end inside, around the arm to the outside, and through the buckle; pull the foot up as tightly as possible, until the heel touches the elbow. When the animal is down you will find the buckle to be in the handiest place, namely, inside the off arm.

Assuming that you have correctly carried out the above preliminaries, your colt or horse will now be in the proper position for throwing, as shown in Plate 37. Take the *end* of the halter-shank in your right hand and push the animal's head gently from you as far round towards the near side of the surcingle as you can manage to do with ease, and at the same time take

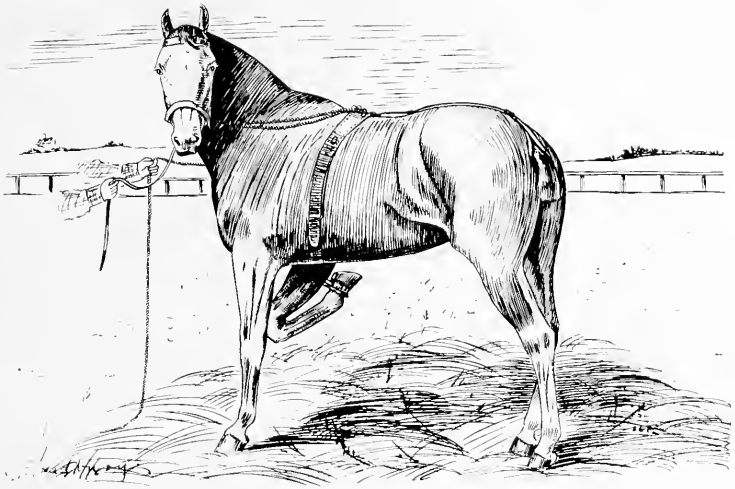

PLATE 37.—THE HORSE PREPARED FOR THROWING SINGLE-HANDED, BY ONE OF THE AUTHOR'S METHODS.

PLATE 38.—THE HORSE DOWN, HEAD EXTENDED.

in the " slack " of the throwing rope ; stand back a couple of yards or so, pull the horse's head round towards the surcingle with your left hand steadily and strongly (not sharply, or with jerks), keeping a slight strain on the halter with the right hand, but allow the left hand to pull the head round, and the animal will gradually *lie* down. Should it attempt to rear, which will very rarely be the case, slacken the throwing rope by a jerk with the left hand and pull on the halter-shank with the right hand. This will quickly right the animal and enable you to proceed with the throwing as instructed.

The position of the colt when down is shown in Plate 38. If it shows any inclination to struggle after being thrown, just pull its head round towards the surcingle (see Plate 39). Repeat this every time it moves, and in a very brief space of time it will lie quite still. Then handle it judiciously all over, including its hind legs; any of its legs can be held in any particular position by means of a short, suitable rope attached to the pastern. For an illustration of the kind of loop to use for this purpose see Plate 6, Diagram 2.

If you desire to put the animal fairly on its back, and retain it in that position, roll it over until its legs are perpendicular, and wedge a bag of hay under each side of it ; then proceed to tie it as follows : Double a strong rope into two equal lengths, and put the double end round the neck where the collar comes, knotting it at the chest ; pass the two ends of the rope round the back fetlocks and taking a twist back again through the neck-piece ; then pull the two hind legs forward as described in the chapter dealing with "Castration." As an improvement on the collar formed by the rope I adopted a broad, flat leather collar, something after the style of a false collar, but very stiff and wide at the wither, with a strong iron ring rivetted in the lower part, i.e. that part which comes between the animal's two fore legs. This leather collar divides and equalizes the strain upon the vertebrae, and renders an accident impossible.

The percentage of horses or colts which struggle whilst being thrown and secured in the above manner is surprisingly small—in my experience not more than two or three in every hundred. During the five years in which I was lecturing and giving exhibitions in this country I was throwing horses almost daily, and I do not recollect more than half a dozen cases which presented any difficulty whatever. Even in those few instances the difficulties were entirely owing to the state of the ground, which was either so slippery or bad in other ways that I could not obtain a good foothold. A bed of straw

placed on a piece of soft ground, or a straw yard, constitutes the most suitable place for throwing purposes.

With but very slight modifications the above method is equally adapted for horses or colts of any description. For throwing "made" or broken-in horses, heavy Clydesdales and Shires, I use a strong bar snaffle, just passing the throwing-rope through the ring on the bit instead of through the ring on the head-collar. For colts, I invariably use my head-collar alone. It is so constructed that the nose-band can be placed a short distance above the nostrils. This arrangement gives the thrower a greater leverage on the neck when pulling the head round, and enables him to bring the animal down quickly and without struggling.

There is *another method* of throwing horses that are particularly vicious and difficult to shoe, etc.—a method which I practised largely during my experience in the Remount Service during the Boer War. All the horses were supposed to be shod before going to the front, and as the heterogeneous collection with which I had to deal contained brutes afflicted with every known and unknown vice, it will readily be understood that the shoeing of them was a serious matter. It was frequently a most hazardous thing to even approach them to put the halter on, and accidents to smiths and their assistants were of daily occurrence. To remedy this state of affairs I devised and practised the following method, which answered admirably:

First make certain that the head-collar and shank are thoroughly strong and reliable, as the success of this method of throwing depends entirely upon the head-gear *not breaking*. Secure the shank round a *strong* post, with a double hitch (see Plate 6, Diagram 1), so that it cannot slip up or down, at about $3\frac{1}{2}$ feet from the ground. Only allow a distance of about 2 feet between the animal's nose and the post, in order to prevent its head from coming into contact with the ground when down (see Plate 42). When the halter is securely and correctly adjusted, jerk the looped end of the throwing rope under the animal towards the near side, take the other end of the rope, walk quietly round the back of the animal with it, and pass it through the loop—thus making a slip loop. Then pull the end of the rope until the noose is reduced to a suitable size and jerk it quickly upwards around both hind legs. When you have got it just above the hocks pull the rope tightly, thus drawing the legs of the animal close together. Stand on the near side, slightly to the rear, and continue to pull strongly. The horse may kick a little at

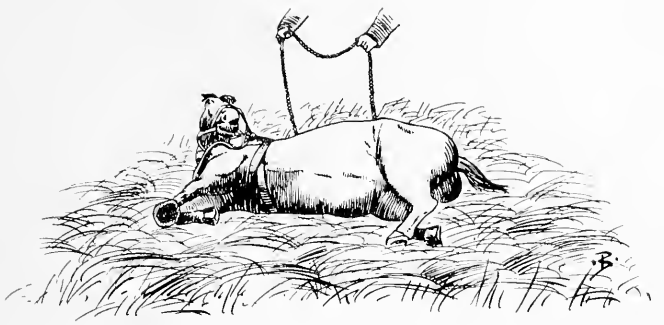

PLATE 39.—THE HEAD PULLED ROUND TO THE SURCINGLE, SO AS TO PREVENT THE HORSE FROM RISING.

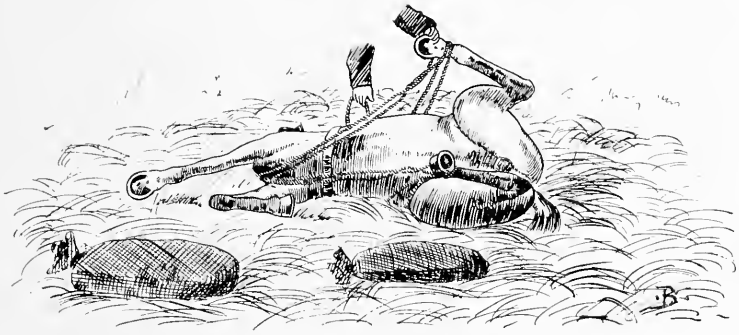

PLATE 40.—A METHOD OF TYING, THE WHOLE PROCESS ONLY REQUIRING ONE MAN.

this stage, but it will soon sit down upon its haunches, and subsequently roll over on its off side. The halter shank will be long enough to allow its shoulder to rest upon the ground, but too short to permit of its head doing so. It cannot therefore injure itself by striking its head on the earth. Should it attempt to rise, a strong and prompt pull on the rope will at once cause it to cease struggling and lie quietly. You may then proceed to fasten its hind legs as follows: Walk round behind it, from left to right—being careful to keep the rope quite taut—then towards its back; when close up, lean over its body and pass the rope again quickly (forming a half hitch) round its hind legs *above the hocks*; then smartly pass the rope a time or two round both fore legs above the knees, pull the fore legs backwards towards the hind ones, and finish off quickly with a half hitch, thus bunching all the legs securely together. Utilize any surplus rope there may be by passing it a time or two round the bunched-up legs. This method of tying prevents the animal from struggling to any appreciable extent, the ropes being placed above the hocks and knees instead of round the fetlocks (as is the case when using "hobbles"), which allows too much play and permits it to struggle with considerable force and violence. The post secures its head firmly, and the position of its head and nose, which are pulled upwards, make anything like a violent effort to rise an impossibility.

The above two methods of throwing are good in every respect, except that the latter (the "post" method) is the easier when the animal to be thrown is unusually vicious and dangerous to approach and handle. As a matter of fact, I have put down many hundreds of horses of every description in both the ways described, and I have never sustained the least injury whilst doing so; neither have I ever seen or heard of any one else who had experienced mishap whilst practising throwing by my system.

The first method described is specially useful for teaching horses to *lie down*, when told to do so, a great desideratum in the case of animals requiring veterinary treatment. If, when the horse is down, you require to restrain one leg without tying the lot together, put a running noose (see Plate 6, Diagram 2) round the pastern of the leg in question, and let one man just lean his weight on it, pulling the leg *forwards* if it be a fore leg, and *backwards* if it be a hind one. The animal will be quite unable to struggle with any amount of force, owing to the fact that it can only utilize the weakest of its leg muscles.

To *keep* a horse down when it has been thrown, pull its head round towards the surcingle and secure it there by means of a single slip-bow-knot (see Plate 39). This will prevent it from rising. In every way this is better than the rough and unscientific practice of sitting or kneeling upon its head in order to keep it down, which hurts and bruises it, and is consequently a direct incentive to violent struggling. In the case of an animal which has fallen down whilst travelling in harness, the proper course is to pull its head upwards and close to the turret ring, with the uppermost rein ; this gives it much less inclination to struggle, and deprives it to a great extent of the power to do so. Moreover, no injury to the head or eye can result, as is very often the case when the head is sat or knelt upon.

In concluding this chapter upon "Throwing," I desire to state my emphatic opinion that it is a great mistake to resort to the practice in order to cure vice, although this was one of the essential features of the "Rarey" system. Generally speaking, throwing is only justifiable and necessary when surgical operations are to be performed, and in those exceptional cases where the animal stubbornly refuses to be shod or clipped otherwise. Even when throwing is necessary for surgical purposes, the "hobble" system is not always the most suitable.

The nervous excitement produced in the animal by its violent struggles to retain its erect position is frequently prejudicial to the success of the proposed operation. Moreover, it is a fact that many surgical operations can be effectively and safely performed without any securing of the animal's legs at all—even after it is thrown. Should it be found necessary to secure any or all of the legs after the animal is in a recumbent position, my method enables this to be done with ease and safety, both to the horse and the thrower.

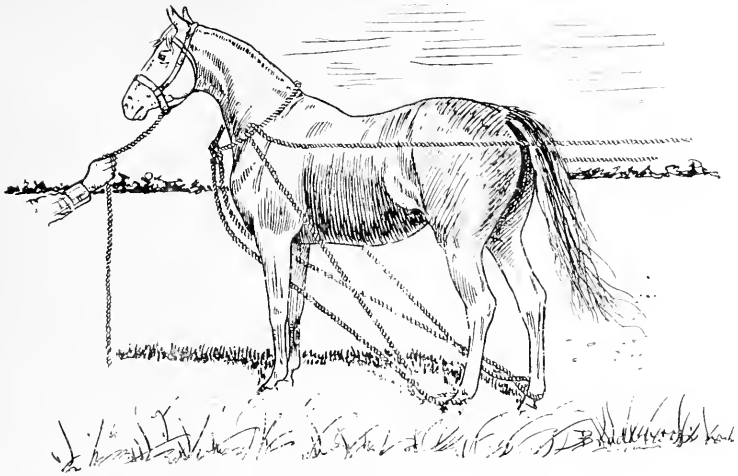

PLATE 41.—A COLT PREPARED TO BE THROWN WITH SIDE ROPES.

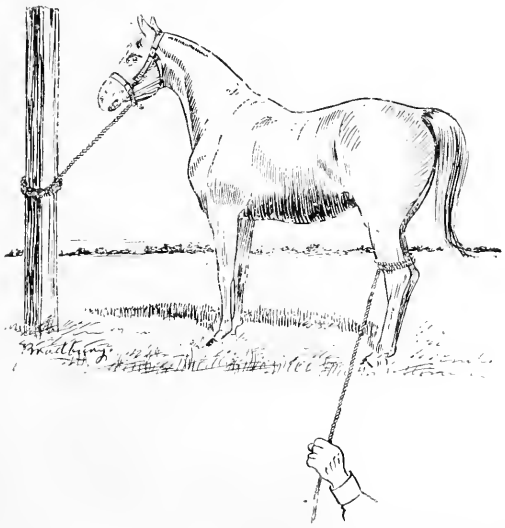

PLATE 42.—ANOTHER OF THE AUTHOR'S METHODS FOR SINGLE-HANDED THROWING. This one necessitates a Strong Post or Tree.

TYING A HORSE TO PREVENT IT FROM BOLTING WHEN UNATTENDED

In Saddle.—Tie up the near side stirrup-iron, close to the top of the stirrup-leather, by running the iron up and passing the leather round under it; then secure it with a single tie-knot, satisfying yourself, by pulling the iron, that the knot will not come unfastened. Pass both reins over the horse's head, and draw the latter round to the near side, fixing it in that position by shortening the near side reins and tying them to the stirrup-iron (see Plate 50).

In Harness.—Procure a strong leather strap, about $1\frac{1}{8}$ inches wide, fairly stout and about 7 or 8 feet long—the length to be regulated by the size of the horse and also, to some extent, by the formation of the vehicle. Affix a strong spring hook to one end of the strap, and clip it on to the bit, pass the strap diagonally across the horse's loins, and at the place where the strap meets the shaft opposite the quarters fix to the strap another and stronger spring hook. The remainder of the strap should be made of double leather, sewn together. It should have a strong ring fastened to the end of it, and must be long enough to pass through the spokes of the wheel and round one shaft. The end ring must then be fixed in the spring hook, thus locking the wheel. For an illustration of the strap see Plate 52, Diagram 22. The following example will perhaps make the *modus operandi* clearer: Supposing you have pulled up on the *near* side of the road, and desire to tie up. Fix the spring hook (at the end of the strap) to the bit on the *off* side, pass the strap over the horse's back across the loins, thus pulling the animal's head round to the off side to the necessary angle; pass the thick end of the strap through the wheel encircling the shaft, and fasten the ring to the spring hook on the strap. When pulling up on the off side, reverse the process, fixing the hook to the near side of the bit. In each case the horse's head will, of course, be pulled outwards towards the centre of the road.

It is a good plan to train the horse a little first, by tying it as directed in an open space, such as a field, or in a disused road. As a rule this will only take a few minutes, and it will enable you to ascertain the exact angle at which the animal's head should be fixed. If the strap be rather too long, you can easily get over the difficulty and obtain the correct angle for the head by passing the strap a time or two round the shaft before fixing the ring to the hook.

HOBBLING, KNEE-HALTERING, PICKETING, RINGING AND TETHERING

HOBBLING.—It is a common custom in Australia, when camping, to hobble both the fore legs of the horse with pastern straps, connected by a short chain. This gives the animal the necessary freedom to graze, and is usually found satisfactory. But some horses get so tricky under this particular form of restraint that they become capable of covering quite long distances in a short space of time, and are even known to jump stiff fences while handicapped in this way. A great objection to pastern straps, when hard or not padded, is that they are liable to chafe the pasterns and produce very nasty and painful sores, which take a long time to heal and frequently cause lameness in the animal.

Another method of hobbling is from near fore foot to off hind foot, or *vice versa*, termed "cross-hobbling." Still another method is "side-hobbling," which consists of coupling the near fore foot to the near hind, or the off fore to the off hind. Either of these two systems is effective with tricky horses, and will prevent them from jumping fences. If a horse becomes tricky under one form of restraint, adopt another immediately; do not give it a second chance.

If a large number of horses, which are intended to be fed on forage, are to be secured in the open, the best way is to tie them together in a ring, with their heads inwards, by fastening their halter-shanks one to the other on each side, allowing each animal just sufficient liberty to get its head down to feed. This process, termed "ringing," I will describe in detail later on.

KNEE-HALTERING.—This is practised in South Africa, and when done correctly is a method to be recommended. It is effected by means of a "reim"—a strip of raw hide—attached to the head-collar as a shank, in place of the ordinary rope. The "reim" is passed round one leg just above the knee, and tied there with a double clove-hitch, allowing a play of about a foot in the "reim." The latter sometimes becomes very hard, and it is

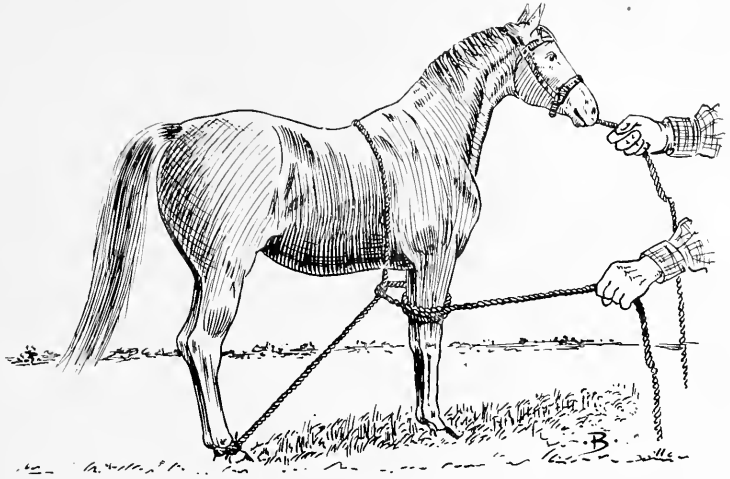

PLATE 43.—THE AUTHOR'S METHOD FOR CONFINING BOTH FORE AND HIND LEGS.

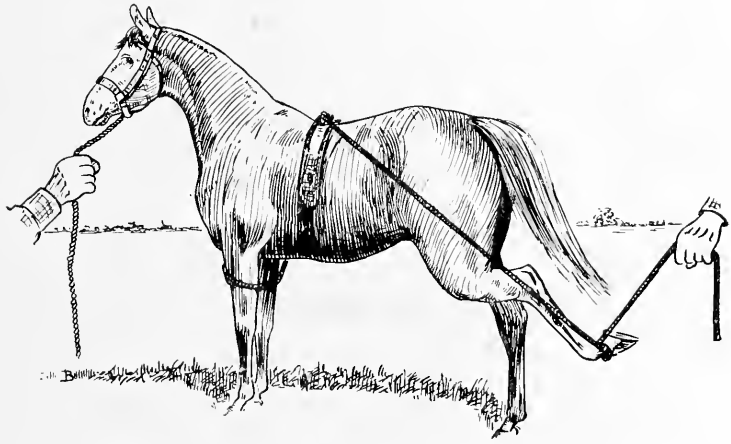

PLATE 44.—THE AUTHOR'S METHOD FOR SHOEING A KICKER, HOLDING THE LEG BACKWARDS.

always liable, if not carefully adjusted, to become so tight round the leg as to impede the circulation, and thus cause swellings and lacerations. The numerous scars which may be observed just above the knees of most South African horses are due to the action of the "reim." If the "reim," instead of encircling the leg, were attached to a properly padded hobble, pain or injury to the animal would be rendered impossible.

PICKETING.—There are two methods of picketing, one by the low rope (the rope lying on the ground, secured by pegs), the other by the high rope. The former method, in conjunction with the securing of the horse by two heel-ropes, is, I believe, the one most approved of by the English military authorities, as being, in their opinion, the more favourable for expeditious "turning out." The latter method consists of fixing the rope taut, nearly breast high, and is supposed to dispense, to a great extent, with the necessity for heel-ropes.

Personally, I do not like heel-ropes at all. On active service, when only ropes are used, it is frequently impossible to keep the hobbles or pastern loops sufficiently soft and pliable. The heels, in consequence, soon become chafed, and on the march it is very difficult to keep the abrasions clean, so as to give them an opportunity of healing.

If, however, heel-ropes are used, *two* are absolutely necessary. The use of one heel-rope only renders the animal's hind legs likely to become entangled, whilst still giving it freedom to kick its neighbour. The entanglement of its legs causes it to fall, and as soon as it is down it commences to struggle until its hind pasterns are skinned. It is no unfrequent occurrence, moreover, for its struggles to bring down its two immediate neighbours also, as I can testify from personal observation. The use of two heel-ropes modifies the capacity to kick, and only allows the animal to kick out straight behind, i.e. provided the length of the ropes be adjusted so as to allow the horse no more freedom than is requisite to allow it to lie down, rise, and stand without forcibly extending its hind legs. It must be pointed out, however, that this advantage of the double over the single heel-rope only exists so long as the *peg remains in the ground*, and this, as a rule, is not very long, unless the ground happens to be exactly suitable.

Whatever method of securing horses in the open be used, the ropes should invariably be fastened with a *slip-bow-knot* only, to enable them to be unloosed at a moment's notice (see Plate 6, Diagram 6).

I do not approve of horse-picketing as it is at present practised on military lines, whether on a large or a small scale. By its practice the animals are always being cast and hurt ; it does not prevent stampeding, nor in my opinion does it facilitate a quick turn-out.

RINGING is, I think, a much safer and better system in every way. Each ring can be formed, say, of twenty-five horses. For the first few nights the animals should be fastened as closely together as possible, consistent with their being able to feed, but after that the number can be augmented and the ring enlarged sufficiently to enable each one to lie down comfortably without incommoding its neighbours. "Ringing" protects the vital parts of every animal from cold winds blowing from any quarter, whereas "Picketing" exposes them, and is a prolific cause of chills, influenza, etc. It may be urged as an objection to ringing that the juxtaposition of the animals may lead them to kick each other. But, as a matter of fact, the closer they are together the less they are able to inflict injury upon each other.

Under *no* circumstances should horses be stood alongside each other with positions reversed, i.e. head against tail, and *vice versa*. Their heads should always face the same direction.

Level and protected ground should always be selected, if possible, for either picketing or ringing, although the nature of the ground is not of nearly so much consequence in the latter as it is in the former, especially if the picketing be in long lines. If it be compulsory to picket on sloping ground, the heads of the horses should be pointed down hill.

For facilitating a quick "turn out," ringing is undoubtedly vastly preferable to any method of picketing which involves the use of heel-ropes. After untying any one horse, in any position in the ring, the "watch" can free each individual animal by *one* unfastening only, whereas, in picketing, *three* distinct unfastenings are necessary ; moreover, two of these unties are always awkward to perform on a restive horse, even in broad daylight, and in the dark the operation is one of real danger.

TETHERING.—It is always a bad plan to tether a horse to a vehicle when on the road. If the vehicle be heavy, the animal may get cast in the spokes of the wheel and injure itself ; if light, a restive animal may start it moving down hill, or turn it over and cause a serious accident.

It is also dangerous to tether two or more horses together by the head and to turn them loose and drive them thus along a road where one is likely

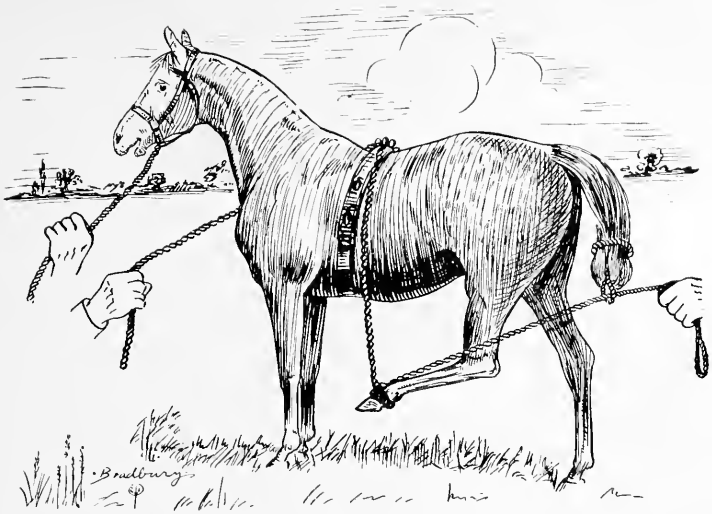

PLATE 45.—THE AUTHOR'S METHOD FOR DRAWING THE LEG BACKWARDS AND FORWARDS.

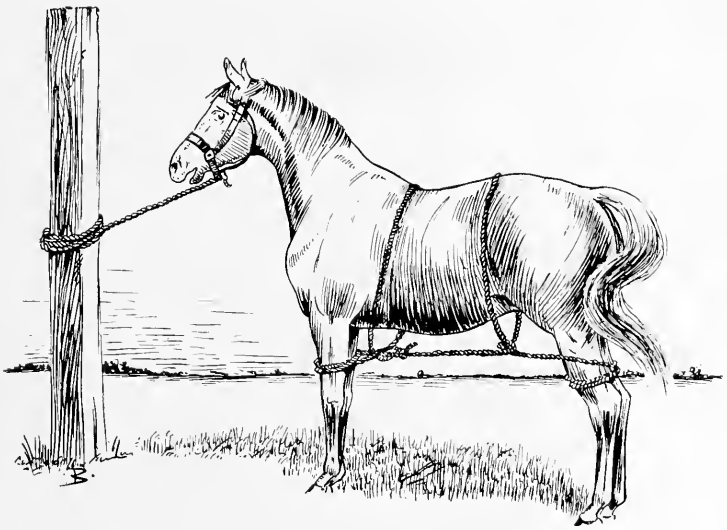

PLATE 46.—THE AUTHOR'S METHOD FOR CONFINING A HORSE IN A STRAIGHT JACKET.

to meet with other horses, or such obstacles as trees, posts, dongas, etc. If, when driving a mob, any individual member of it, which is a trained animal, constantly attempts to break away, knee-halter it and allow it a little more than the prescribed freedom. After a short time of this unwonted exercise it will most likely settle down and follow contentedly. Such an animal should be especially well secured at night.

THE GALVAYNE "HUMANE" TWITCHES AND GAGS

THE use of the old twitch was only justifiable on the ground that no other equally effective and less barbarous appliance had been invented. It consists simply of a strong and stout piece of stick, with a hole at one end, and a piece of cord passed through the hole and tied so as to form a loop about 6 inches long (see Plate 26, Diagram 18). Its mode of application is as follows: The end of the animal's nose, or its ear, is slipped through the loop, and the stick is then turned or screwed round and round until the ear, or the entrapped portion of the nose, is nearly cut off. I have known the ear to be permanently injured by this primitive and barbarous practice, the muscles for moving, erecting, and keeping that organ erect having been completely paralysed and rendered useless by the brutal treatment; whilst a horse which has been frequently "twitched" thus on the nose is more than likely to develop vice in consequence, and render dangerous the operation of haltering or bridling it.

I think I am justified in claiming that my twitches, as described in detail hereafter, constitute a vast improvement, from every standpoint, upon the old one. I have frequently known them to succeed in rendering a really vicious horse so quiet for grooming that, after a time, a mere twist of the halter-shank in the mouth was all that was required. As an instance I may mention the case of the vicious race-horse "North Riding." When my man heard that this brute was to be entrusted to me for treatment, he proceeded to the stable to inspect him. Just as he arrived the animal was about to be taken out of his box. The lower door of the box was closed, and two men were leaning over it (from the outside, of course), each holding a hooked pole, affixed to the horse's head-collar—one on each side. The door was opened, and the animal led into the yard. A twitch was then tightly applied to its nose, and another on one of the ears. The near foot was tied up, and the grooming commenced, a dandy-brush tied to a broom-stick being utilized for the purpose. The horse, however, maddened by the pain inflicted by

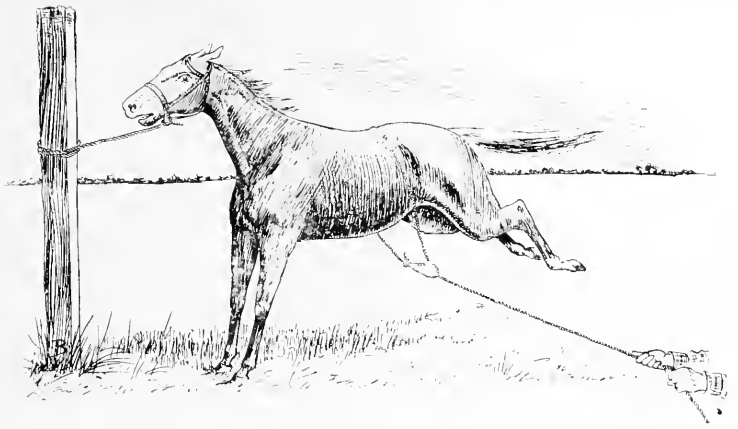

Plate 47.—A Quick and Effective Method by which to Cure a "Kicker" or "Bucker."

Plate 48.—One of the Author's South African "Friends" Coming for Him while in the Ring

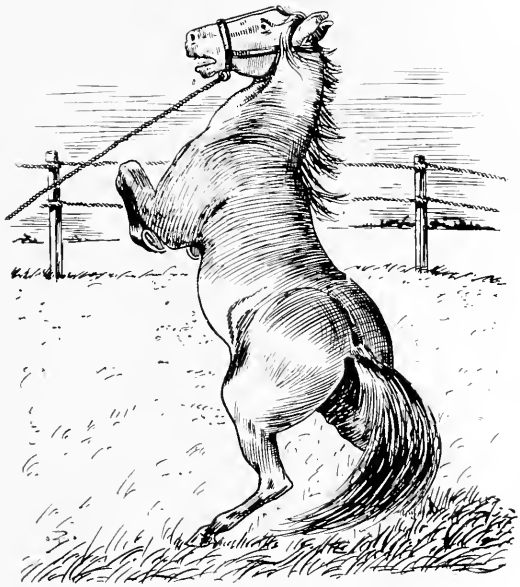

PLATE 49.—ANOTHER SOUTH AFRICAN "FRIEND."

the twitches, fought with demoniacal fury, and effective, or in fact any, grooming was an utter impossibility. Yet within two weeks, this animal, principally by the use of my twitches, was made so quiet to groom and shoe that it was taken to a forge and shod by the smith like any ordinary horse.

It now remains to explain the twitches I have invented, to enable the reader to apply them himself whenever necessary. The requisite paraphernalia are simply two pieces of cord (the best whipcord), one of five strands and the other of seven.

Twitch No. 1.—Take either of the cords and double it into two equal lengths; pass the doubled end through the ring of the bit or head-collar, slip it into the animal's mouth and pass the lower jaw through it. Then pull it tightly with your right hand, keeping the horse's head away from you with the left by holding the near side cheek of the halter close to the ring through which the twitch cord passes, and allowing it to pass through the left to the right hand. Or it may be made effective with the left hand only (see Plate 60, Diagram 64).

This twitch is useful for general purposes, and also for keeping a restive kicker quiet in an emergency. By its aid alone, in the presence of 300 persons, I put a complete set of harness on a notorious and tremendous kicker, and kept it perfectly quiet while doing so. In the same way I superintended the shoeing of a vicious stallion at Burton-on-Trent; in this instance holding the twitch in my left hand only in such a way that it was not noticed by any one of the 300 or 400 onlookers, who could not understand why the animal remained so quiet, until I furnished the explanation.

Twitch No. 2.—This is illustrated in Plate 26, Diagram 17. Take the thinner cord, and make a knot in it about 6 inches from one end, pulling the knot tight. Then make another knot about 6 inches from the first, leaving the *second knot open*. Pass the knotted end of the cord through the animal's mouth, and bring it round the lower jaw. Then pass it through the open knot, and work it up quite tightly against the jaw; pass the other end of the cord over the neck from right to left close to the wither, then through the loop round the jaw, thus pulling the horse's head downwards towards its chest. Secure it with a single slip bow, and the twitch will then be effective. To loosen it, just pull the end of the cord forming the slip knot. Be careful not to allow the part round the neck to slip up towards the head (see Plates 27 and 28).

The following extract from a letter written to me in April (1903) by one of my former pupils constitutes a very striking testimony to the efficacy of this twitch, and is valuable as a spontaneous and disinterested expression of outside opinion. He says : " I had occasion lately to ball a 16–2 thoroughbred—one able to take care of himself. Previously, the sight of the slightest preparation for balling, or an attempt to touch his tongue, was sufficient to make him walk on his hind legs and fight like a man. Even on this occasion it was only possible to get your ' humane ' twitch in his mouth by putting on a bridle at the same time. But in about two minutes he had the appearance of a horse nearly asleep, and allowed me to pull out his tongue and pass the ball back with my hand without making the slightest movement, and even without apparent consciousness on his part. The sight of an ordinary twitch *maddens* him."

Plate 28 shows Twitch No. 2 fixed in position.

Twitch No. 3.—This is for stopping runaway horses, whether being ridden or driven in harness. If to be used when riding, fix a strap across the pommel of the saddle from D to D (see Plate 32, Diagram 21) ; fasten the cord to the lower jaw of the horse as with Twitch No. 2, pass it under and over the strap on the saddle, return it and pass it through the loop on the jaw, bringing it back and tying it to the off side D, or to the buckle of the stirrup-leather. The cord should be so loose that the horse will be in ignorance of its adjustment until it is put into action by the rider. (See also Plate 30.)

For harness purposes, when returning the cord from the jaw pass it through the first top ring of the surcingle, or with ordinary harness pass it round the bearing-rein stop and back through the loop on the jaw, then through the off side terret to the driver's hand. It will then be ready for use. This twitch may be applied in a modified form by passing the cord direct to the driver's hand, through the ring on the hame and the terret For appearance sake, a round leather rein may be used, the cord being exposed at the end just sufficiently to encircle the lower jaw.

Twitch No. 4.—This is adapted for a horse which rears in saddle. Fix the cord on the jaw, as with Twitch No. 2, pass the end of the cord through the breastplate, between the fore legs through a ring fixed in the middle of the girth, and then up to the right hand ; or the end may be fastened as described under Twitch No. 3. Immediately the animal shows any inclination to rear, pull the cord. This will have the effect of drawing the horse's head

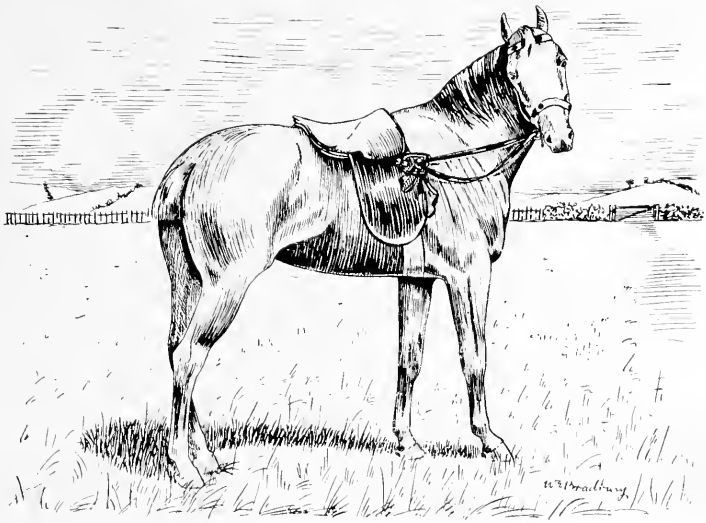

PLATE 50.—THE AUTHOR'S METHOD OF TYING A SADDLE HORSE TO PREVENT ITS RUNNING AWAY WHEN LEFT UNATTENDED.

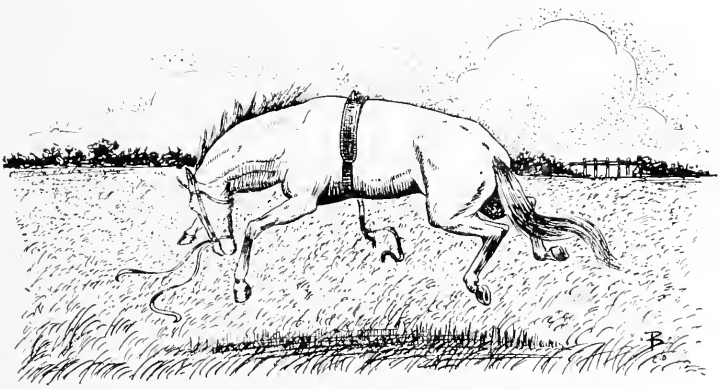

PLATE 51.—AN OLD ACQUAINTANCE FROM AUSTRALIA.

downwards. I have completed the cure of most inveterate and dangerous rearers with this twitch (see chapter on "Vices: their Prevention, Causes and Cures"); but it is to be noted that the "long-reins" treatment must be applied to rearing horses before using the twitch on them.

Twitch No. 5.—This will cure the habit of rearing in harness. It is practically the same as No. 4, except that after the cord is passed through the ring on the underneath part of the surcingle or belly-band it must be passed over the breeching to the whip hand of the driver. The necessity for prior treatment with the long-reins applies to this twitch also.

Twitch No. 6.—This is the "side-twitch," and is a very powerful one, capable in itself of temporarily subduing any horse. I have used it on extremely vicious animals, when it has been impossible to get near their tails to "Galvayne" them. It is applied as follows: Affix the cord to the jaw, in the same way as No. 2, put on the surcingle tightly, pass the end of the cord through the lower ring on its near side, then pass it under the belly and up the off side, tying it with a slip-bow-knot to the ring at the top. This will bring the animal's head round to the near side, in the "Galvayning" position, and will enable you to take hold of its tail without danger. By the application of this twitch alone I have instantaneously reduced to complete subjection for the time being a mare which just previously had been kicking with intense savageness and literally screaming with excitement and rage.

For mares which are likely to kick whilst being served, apply either Twitch No 1 or No. 2. For leading a vicious stallion, fix the cord on the lower jaw in the same manner as in No. 2, then pass the end of the cord through the off side ring on the surcingle, bringing it over the back through the top ring and direct to the hand as a leading rein. You will then have a commanding off-side rein, capable of backing the animal as well as keeping it off you. This is to be used in conjunction with the ordinary leading rein for a stallion. The off-side short rein fixed to the surcingle will not interfere with the action of the twitch as described.

Diagram 22.
A strap and hooks to prevent a horse running away, also for locking the wheels of the vehicle.

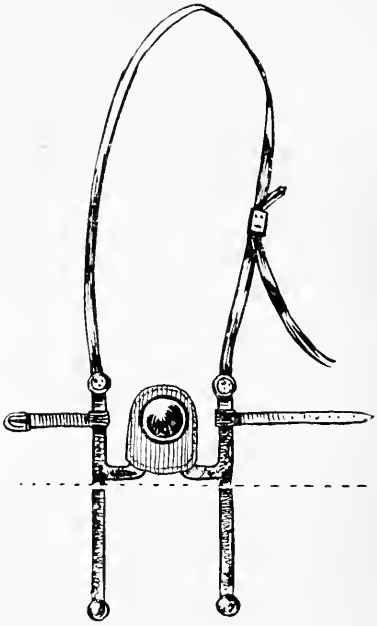

Diagram 23.—The "Ball" Gag.

Diagram 24 — The "Roller" Gag.

TWO EFFECTIVE GAGS TO FACILITATE THE EXAMINATION OF THE MOUTH, OR FOR PURPOSES OF OPERATION

THE BALL GAG is made by filing off the bottoms of the cheeks of a very high ported bit; the port is fitted inside with a hard or wooden ball, and the whole is covered with leather and sewn (see Plate 52, Diagram 23). In its application the bit must be placed as high as possible in the angle of the lips, and when in that position, buckle the strap fairly tight over the nose, sufficiently high up the face as not to compress the nostrils; this will cause the ball to press against the palate, preventing the closing of the mouth. This gag is perfectly harmless and humane—does not cause pain in the slightest degree.

THE ROLLER GAG is made of a piece of hard wood about $1\frac{3}{4}$ inches in diameter and 5 inches long, fastened by screws to strong leather straps (see Plate 52, Diagram 24). In application the straps must be so arranged as to retain the roller high up in the angle of the lips and between the teeth, thus preventing the mouth from closing.

An impromptu and effective gag is made with an ordinary rope halter (not choked) as follows: Pass the part which is usually under the jaw into the mouth, pull the shank, causing the mouth to open and remain in that position; if the pressure applied is no greater than is necessary to effect this object, the animal is not likely to fight.

All horses are not affected in the same manner by the same appliance, and it is sometimes necessary to try different ones to obtain a satisfactory result

COLOURS AND DESCRIPTIONS

APPENDED is an exhaustive list of the "whole" colours of horses, and of the numerous subsidiary mixtures, together with full explanations of the descriptive terms in use.

As is well known, it is somewhat of a rarity for a horse to be absolutely of one uniform colour, without spots of any sort. When these spots are present, they are known as "markings." A spot in the forehead is termed a "star"; a slight white streak down the face, a "stripe"; a wide one, a "blaze"; a white mark on the nose, a "snip"; or, if much more than a mere mark, a "white nose." Spots on the back, near the withers, are termed "saddle marks." If the spots are where the girth is situated, the animal is "girth-marked"; if on the collar, "collar-marked." Markings of the legs and feet would be described in detail accordingly, such, for example, as "white fetlock," "white leg," "white coronet," "white stockings," etc.

A general description of a horse might read as follows: "Black gelding, small star and snip, off fore and near hind coronets white, few white hairs in tail," etc., etc.

WHOLE COLOURS—*Black, Brown, Bay, Chestnut, Roan, Dun, Grey* and *White*, some of which may have the prefix of "Dappled."

BLACK HORSES: these must always have *black* muzzles.

JET BLACK—when the coat has a polish or bloom.

BLACK-CHESTNUTS—black horses with chestnut hairs intermixed.

BLACK-GREYS—have grey hairs *sparsely* intermixed with the black.

BLACK-ROANS—have roan hairs slightly intermixed with the black.

BLACK-PIEBALDS—a mixture of black and white, black predominating.

BLACK WITH WHITE POINTS: describe markings.

BROWN HORSES: these must always have *tan* muzzles.

BROWN-SKEWBALDS—parti-coloured with white, brown predominating.

BROWN-ROANS—have roan hairs freely intermixed, brown strongly predominating. Brown muzzles.

BROWN-CHESTNUTS—have chestnut hairs intermixed with the brown.

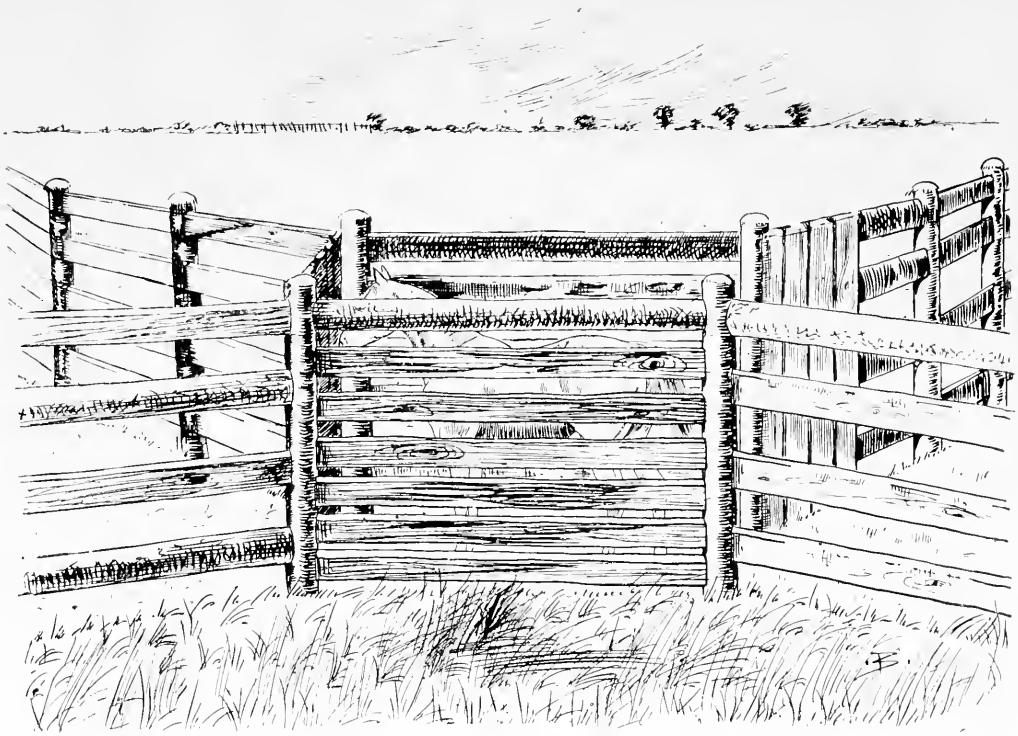

PLATE 53.—AN AUSTRALIAN "CRUSH."

Brown with White Points: describe markings.
Brown with Black Points—black feet or legs.
Brown-ticked Grey—have grey hairs slightly intermixed with the brown.

Bay—a light reddish brown.
Golden-Bays—are bays with a golden gleam on the hair.
Blood-Bay—a deep, rich, bronze bay, or horse-chestnut gleam of coat.
Mealy-Bay—a dusty, rusty bay.
Bay-Skewbald—parti-coloured, with white, bay predominating.
Bay with Black Points—with black feet or legs.
Bay with White Points—describe markings.
Bright-Bay—horses of a bright rich colour between a golden and a blood bay.
Bay-ticked Grey—these have grey or white hairs slightly intermixed with bay.

Chestnut—a bright, golden colour, between a red and a bay.
Light-Chestnut—yellower in colour and less golden.
Dark-Chestnut—of a deep blood colour (sorrel).
Chestnut-Skewbalds—parti-coloured, chestnut predominating.
Chestnut with White Points: describe markings.
Chestnut with Bay Points: bay feet or legs.
Chestnut-Roans—have roan hairs slightly intermixed with chestnut (sometimes called red roans).
Chestnut-ticked Grey—have grey hairs slightly intermixed with chestnut.

Grey—grey in body, also having grey points.
Steel-Grey—is a mixture of bright black hairs and black grey points.
Iron-Grey—still a dark grey, but having reddish hairs very slightly intermixed.
Flea-bitten Grey—grey covered with black ticks.
Blue-Grey—having a free mixture of blue hairs.
Mealy-Grey—a rusty sort of blue grey.
Light-Grey with Black Points—grey with so-called black legs, mane and tail; but the points usually have a free intermixture of grey hairs.
Silver-Grey—grey with white silky mane and tail.

White : all white ; should have a white muzzle, but sometimes the muzzle has a bluish tint.

White—with grey mane and tail.

White—with small black, brown, or bay patches or spots.

Flea-bitten White—usual appearance of an aged white horse.

Roan—a mixture of various colours.

Black-Roan—a very dark roan with black points, black mane and tail, and black muzzle. These "black" points are generally slightly intermixed with roan hairs.

Brown-Roan—these have brown points, and brown muzzles, mane and tail.

Blue-Roan—a generally lighter shade than the above, having a free mixture of blue and grey hairs, dark mixed mane and tail.

Bay-Roan—lighter shade than the brown-roan, with bay points, and bay muzzle, mane and tail.

Roan-Chestnut—has chestnut hairs freely running through the roan, with chestnut points, light-coloured muzzle, chestnut mane and tail (sometimes called red, and sometimes strawberry-roans).

Dun—a special feature of this colour is that it invariably has a black or dark streak along the spine.

Dark-Dun or Mouse-colour—has black points, mane and tail, and generally a musty black muzzle.

Light-Dun—has a light, mealy bay muzzle, mane and tail.

Silver-Dun—has dark cream points and silver mane and tail.

Cream—these have cream manes and tails, but do not have a streak down the back as duns have. They have cream muzzles and points.

Silver Creams—with bright silver manes and tails.

Skewbalds—these are of a mixed colour and comprise a combination of two or three colours, such as brown, bay, chestnut with white. But on one occasion a "new chum" in Australia remarked to me that he would describe such a horse as a "tortoiseshell"—rather an apt description, as he argued, they have "tortoiseshell" cats in England, why not "tortoiseshell" horses in Australia ?

THE GENERAL CONFORMATION OF THE FORE LEGS

IT is not nearly so difficult to acquire a correct knowledge of the ideal conformation of the fore legs as is the case with regard to the hind legs. The former are, of course, more conspicuous, and also easier to examine manually with safety. The desiderata in a fore leg are (1) a broad flat bone, combined with a well-developed and strong-looking knee, and (2) a pastern neither too long nor too short. The whole limb should, in fact, be in harmony with the body, perfect in shape and in position. The feet must, of course, be well-shaped and sound. The readiest and best way of imparting information on this subject to the general reader will be by means of diagrams, as in the case of the hock and hind legs.

PLATE 54.—Diagram 25 illustrates a weak, small knee, and a general deficiency in "bone."

Diagram 26, a calf knee, showing a knee-joint with a tendency to bend inwards and backwards. It is a remarkable peculiarity about horses with this formation in their fore legs that they seldom fall. In all my experience I have never seen a calf-kneed horse with indications of having broken its knees.

Diagram 27 depicts a knee of the correct shape, with "bone" in proportion.

Diagram 28, the fore legs too close together, and the feet slightly "pigeon-toed."

Diagram 29, the legs too wide apart.

Diagram 30 (Fig. 1), a long pastern, denoting weakness and great liability to injury.

Diagram 30 (Fig. 2), a good pastern, of the right length.

Diagram 30 (Fig 3), a short pastern. This is an undesirable shape for a saddle-horse, as it involves liability to exostosis.

PLATE 55.—Diagram 31. This formation is generally known as "lady-toed" in the Colonies. The legs are inclined inwards, and the toes outwards.

Diagram 25.

Diagram 26.

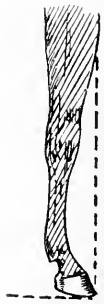

Diagram 27.

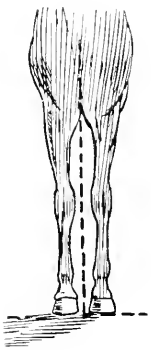

Diagram 28.

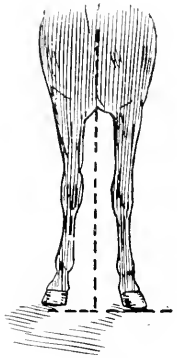

Diagram 29.

Fig. 2.

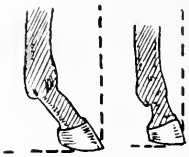

Fig. 1. Fig 3.

Diagram 30.

Diagram 32. This illustrates a clear case of "pigeon-toes," which is a very bad defect in riding-horses.

Diagram 33. This shows a short pastern, with the knee weak, and light in "bone."

Diagram 34 illustrates a long, weak pastern, with a weakly-formed knee.

Diagram 35, a pastern of moderate length, but a weak knee.

Diagram 36. The leg here is light in the bone, and is set too far back under the animal. Horses with fore legs of this formation are always extremely liable to fall.

PLATE 56.—Diagram 37. This shows a very long and weak pastern, and the bone light below the knee.

Diagram 38. A well-defined knee, good bone, with a pastern of the correct length.

Diagram 39 shows fore legs with a straight and correct frontal appearance.

Diagram 40. The legs here are too wide, and the bone is crooked below the knees, causing the feet to point outwards.

Diagram 41. This is another example of bones crooked below the knee, giving the legs a bandy appearance.

Diagram 42 shows poor action, resulting probably from a lack of freedom of the shoulder, combined with badly-defined and weak knees.

PLATE 57.—Diagram 43. Faulty trotting action, short, deficient in elasticity.

Diagram 44. This shows a perfect action and formation.

PLATE 55.—VARIOUS FORMATIONS OF THE FORE LEGS.

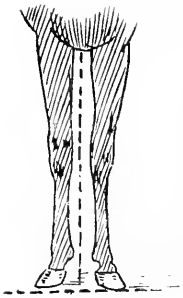

Diagram 31.

Diagram 32.

Diagram 33.

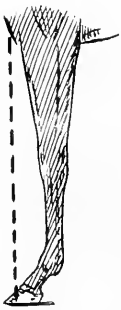

Diagram 34.

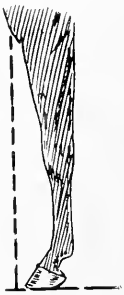

Diagram 35.

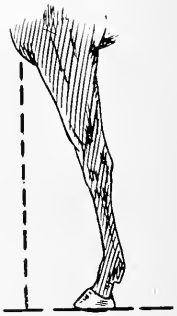

Diagram 36.

PLATE 56.—VARIOUS FORMATIONS OF THE FORE LEGS.

Diagram 37.

Diagram 38.

Diagram 39.

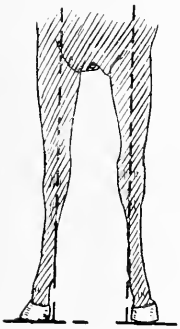

Diagram 40.

Diagram 41.

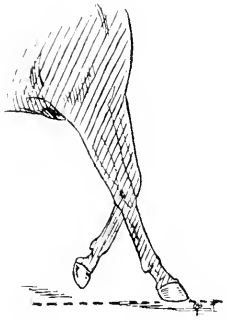

Diagram 42.

CONFORMATION OF HOCK—GOOD AND BAD

THE hock is rightly considered to be the most important joint in the horse's frame, and a thorough understanding of it can only be attained by much careful study and observation. The first step in this direction is to train the eye to recognize the correct size and formation of a perfectly-shaped hock, or rather of the various perfectly-shaped hocks, for of course the size of the hock of a hunter differs from that of a draught-horse, and so on. The second essential qualification is to be able to confirm the eye judgment by manual examination.

The formation of the hock is always associated with, and dependent upon, that of the leg. A badly-shaped leg invariably implies a badly-shaped hock also.

A well-shaped hock is always clean-cut and well-defined. Large and prominent bones are essential to strength, being indications of well-developed ligaments and tendons. A hock which is defective in conformation is more susceptible to disease than one which is normally shaped, the latter being comparatively seldom unsound.

The most effective and easiest way of teaching the reader to differentiate between good and bad conformations is by means of diagrams.

PLATE 57.—Diagram 45. This shows a common kind of hock and quarter, indicative of no particular defect, but characterized by general lack of character and strength.

Diagram 46 represents a good style of quarter and hock, of the clean-cut hunter type, and denotes an animal that should be capable of great exertion.

PLATE 58.—Diagram 47, also Diagram 51, for illustrations of hocks and legs which are *too straight*.

Diagram 50. In this the hocks are placed too far back, rendering them undesirable for extreme exertion in either galloping or jumping.

Diagram 52 shows hocks that are too much bent. This shape denotes great weakness, and inability to stand hard work of any kind. There are

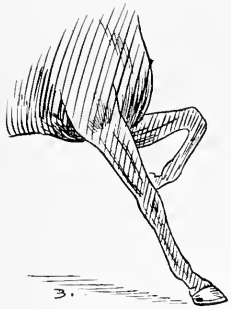

Diagram 43.—Faulty Trotting Action.

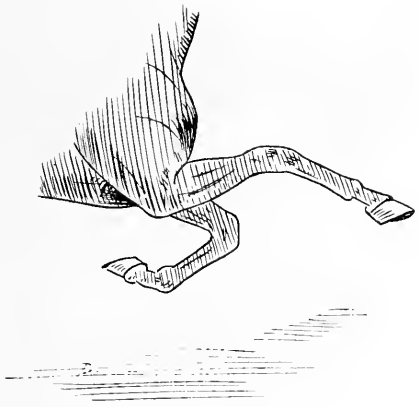

Diagram 44.—Perfect Action and Formation.

Diagram 45.—Common Hind Quarters.

Diagram 46.—Well-bred Hind Quarters.

rare exceptions to this rule, and I was once the possessor of such an exception, but it was about the only one I have ever come across in the whole of my experience.

PLATE 59.—Diagram 53 "*Cow-hocked.*" This shape denotes weakness, with special liability to spavin.

Diagram 54 illustrates a wide action, the hocks being far apart, a style of action adopted by most fast trotters.

Diagram 55, a stiff hock, showing cramped action and lack of flexile power. It is altogether an undesirable hock for any purpose.

Diagram 56. This shows hocks of the right shape, and correct width apart.

Diagram 57 illustrates what is generally considered to be the best type of hock and conformation combined.

Diagram 58 shows the perfection of action and flexion of the hock joints. This superlative beauty of action, when trotting, is only to be found in the very cream of trained "hackneys" and trotters.

THE EXAMINATION OF A HORSE WITH REGARD TO SOUNDNESS

CONSIDERABLE practical experience is absolutely necessary before the ability to determine with certainty whether a horse is sound or otherwise can be acquired. Moreover, in addition to the practical experience, the possession of the natural gift of " comparison of form " is also essential. No amount of study or theoretical teaching will suffice to make a man a capable and reliable judge in the absence of the above qualifications. Personally, I am inclined to attach even more importance to the natural gift than to the practical experience, certainly more than to the theoretical teaching. It is frequently the case that a man, entirely destitute of any scientific knowledge of the animal's anatomy, but having the natural gift of comparison and a large amount of practical acquaintance with horses, will detect, almost at a glance, some defect which has escaped the observation of one thoroughly familiar, from a theoretical and scientific point of view, with every section of the animal's body and every detail of its configuration.

In Australia, generally speaking, the buyer has perforce to rely entirely upon his own judgment, not having a " vet " to fly to for advice. Moreover, he has frequently to rely upon " eye judgment " alone, as it is impossible to get one's hand upon entirely unbroken colts. It must be admitted, however, that the examination of horses there is by no means so difficult a matter as it is in England, Australian horses being generally much freer from disease and lameness than those of this country. I attribute this comparative immunity largely to the unquestionable superiority of the climate of Australia for horse-breeding purposes. This climatic superiority, and the more favourable breeding conditions resulting therefrom, give the Australian horse a naturally hardier constitution than his English brother. The rearing of the latter is very largely artificial—necessarily. From early foalhood the English animal is reared in a state of comparatively strict confinement, and even after it has attained maturity it is often located in a close stable, the atmosphere of

which is so strongly impregnated with the stench of ammonia that a human being would almost be suffocated if placed in it for an hour or so with the door of the stable shut. How is it possible to rear or keep stock healthy and hardy, under such conditions? The feet, lungs, and all the other organs must naturally suffer, and the verification of a horse so reared becomes a difficult matter even for the most expert, for the simple reason that the animal is probably unsound or unhealthy, in some degree, in every one of its organs and functions, whilst at the same time no actual, tangible defect may be either apparent or even capable of detection.

The moral of the above observations is that, in this country at least, it is advisable for a prospective buyer to requisition the services and advice of a thoroughly qualified and experienced expert before purchasing, unless he is quite satisfied that he himself possesses the necessary qualifications. For those, however, who for any reason are unable to comply with this advice, I append a few hints which should be of service if attentively perused and intelligently acted upon.

The first thing the would-be expert must do is to educate his *eye* with regard to the conformation of a *sound* horse, and this is only to be done by carefully scrutinizing animals which are admittedly and indisputably sound in every respect. The eye will thus be educated sufficiently to detect, by instinctive comparison, any important defect or malformation, should such defect exist.

The best time to examine a horse is in the early morning, when it is in the stable. First look in the manger for signs of "*quidding*," i.e. food which has been partly masticated, and, instead of being swallowed, dropped in the manger. Then stand quietly behind the animal for a few minutes to ascertain whether it has any such stable vices as "wind-sucking," "crib-biting," "weaving" or "pawing."

Wind-sucking is a habit whose name indicates its nature. In a stable it is a great nuisance, as the habit is very likely to spread from one to the other occupants.

Crib-biting.—Indications of this will be apparent on the mangers, and also on the teeth, which will have become bevelled at the edges.

Weaving.—This is a very peculiar stable-vice. The horse afflicted with it has a restless side-to-side motion, somewhat similar to, and almost as methodical as, the swing of the pendulum of a clock. It is a rather singular fact

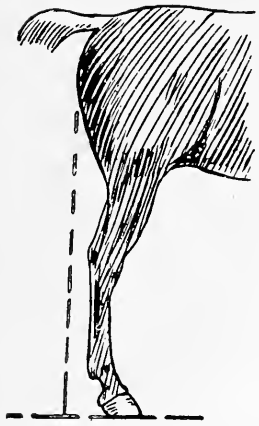

Diagram 47.

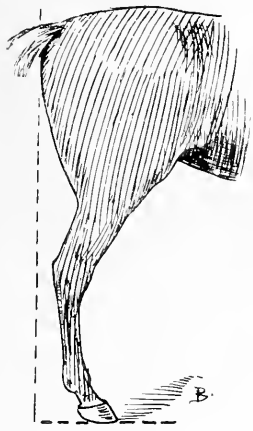

Diagram 48.

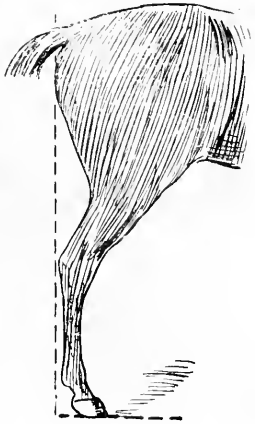

Diagram 49.

Diagram 50.

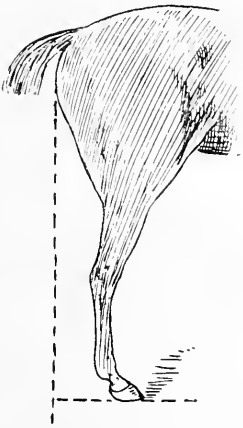

Diagram 51.

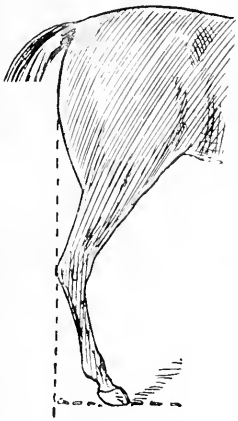

Diagram 52.

that the " good sorts " of horses seem to contract this habit more readily than the inferior specimens. A couple of side-bars, fixed between the head-collar and the partitions, will prevent the swaying motion, and may eventually effect a permanent cure of the habit.

PAWING.—Examine the stones or flooring upon which the fore feet rest, and also the toes of the front shoes, for evidence of this habit. Also see if the horse appears restless and uneasy upon any of its feet. Many horses naturally rest one of their hind legs at a time, each alternately, but very rarely the fore legs unless they are diseased. Should any suspicious action of the legs be observed, a searching examination of the doubtful parts should be made.

The next thing to be examined is the PULSE, and as this is a matter of considerable importance I recommend that the examination be made with care. The pulse may be felt in several parts of the animal, but the most convenient place is on the *lower jaw*. At this spot the pulsations may not only be distinctly counted, but the *character* of the action may also be readily and accurately ascertained. The heart-pulsations in a healthy farmer's work-horse range from thirty-seven to thirty-nine beats per minute ; in a thoroughbred, forty or forty-one. These figures, of course, are only applicable to the condition of the pulse when the animals are *at rest* ; exertion of any kind naturally increases the rate, in proportion to its degree. Nervousness, fear, excitement of any kind, or an over-warm stable, will also augment it. A rate of fifty to fifty-five beats per minute denotes a certain degree of fever, and higher rates, of course, a greater degree. In a healthy horse the pulse is regular, and beats neither too hard nor too soft. The temperature of a horse in good health, and in a state of repose, is 99° to 100° F. Any considerable deviation from the above indications of healthy pulse and temperature should be regarded as serious and as calling for an exhaustive expert examination.

After having satisfied yourself as to the condition of the pulse and temperature, turn the animal over smartly in the stable and look for evidence of—

STRINGHALT.—This consists of a convulsive, spasmodic, and more or less violent snatching up of the hind feet. It is very prevalent in Australia, where it shows itself in its worst forms. I have frequently seen, in that country, horses so severely afflicted with the disease that they would strike their bellies so violently with their hoofs as to cause serious abscesses. So far

as my observation goes, the complaint is met with in this country in a milder form, and is frequently only noticeable *when the animal is turned abruptly round.*

Sight.—You should now lead the horse to the door to examine its eyes. Of course these organs are subject to various diseases which only a veterinary surgeon can detect, but a few practical hints may not be superfluous. First see that the pupils are identical in size, as they should be if the eyes are perfectly healthy and normal, and that the organs bear no trace of any previous affection. Then examine for symptoms of *cataract.* Shut the stable door, to exclude the daylight as far as possible, then light a match or candle and pass it in front of the animal's eye. If the latter is healthy, three reflections of the candle-light will be seen in the pupil. Two of the reflections will appear *erect,* corresponding with the position of the light, whilst the third will appear *inverted.*

The horse should now be taken out of the stable and placed upon level ground, and an assistant should hold it with a long hold on the halter-shank—not close to the head. Walk leisurely round the animal, and carefully scrutinize it for such defects as "broken" knees, ringbones, splints, sand-cracks, disparities in size of the feet, etc. Inspect the *teeth* for irregularities, the incisors for age and the molars for soundness. Look at the *nostrils* for evidence of cold, strangles, nasal gleet, or glanders. Examine the *poll* for "poll-evil," the *throat* for marks of the crib-biting strap, and the *withers* for fistula. See if there are scars on the *knees,* and pass your hand down the horse's *legs* for evidence of splints and sore shins. I do not, however, consider that one would be justified in rejecting a young horse on account of splints alone. They frequently develop at the age of three or four years, and usually disappear subsequently without any treatment at all. A sore shin may be detected by the presence of a slight swelling in front, which, if recently developed, will contain a certain amount of heat. Inspect the inside of the knees, both above and below, for "speedy-cutting" scars. Horses that "dish in" with their front feet are especially liable to have these scars, which are caused by the hoof of one foot striking against the knee of the other fore leg. Animals which do this are liable to be brought down in consequence.

Ringbone.—In the early stages of development this is not too easy of detection; but when the exostosis is fully developed and has become in-

PLATE 59.—FORMATION OF THE HIND QUARTERS AND POSITION OF THE HOCKS IN REPOSE AND MOTION.

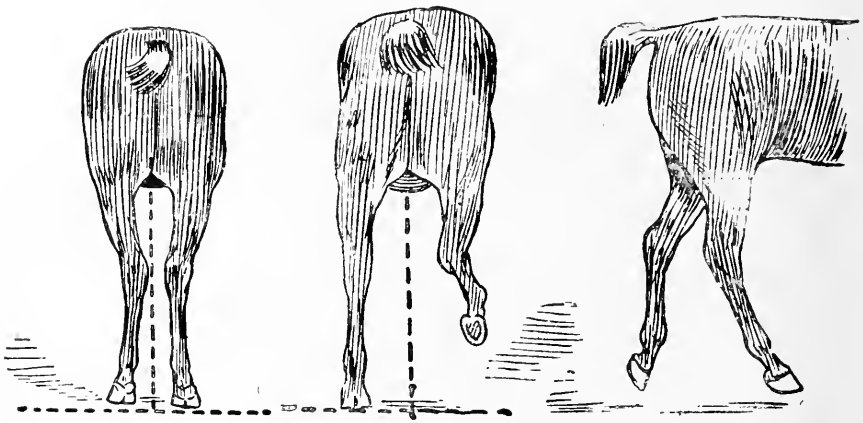

Diagram 53. Diagram 54. Diagram 55

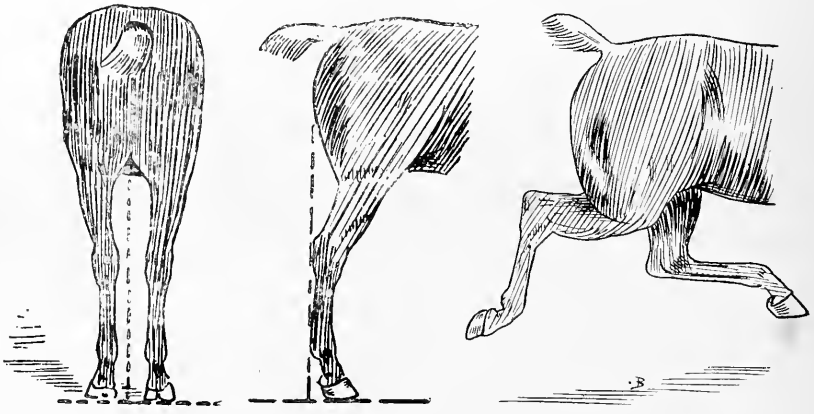

Diagram 56. Diagram 57. Diagram 58.

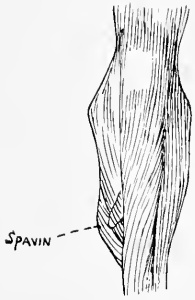

Diagram 59.
The Seat of Spavin.

Diagram 60.
The Seat of Curb.

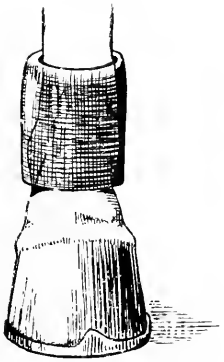

Diagram 61.
A Yorkshire Boot.

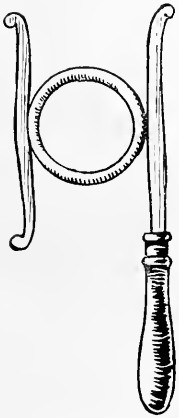

Diagram 62.
A Plain Balling Iron.

Diagram 63.
A Screw Balling Iron.

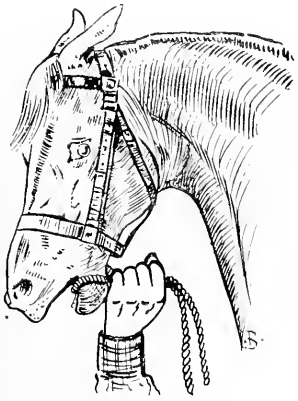

Diagram 64.
A Kicker being Shod quietly with No. 1 Twitch on.

durated it can be distinguished readily enough, either by sight or touch. Ring-bone is a bony growth round the hollow circle of the little pastern. SIDE-BONES are lower down than ring-bones, and are situated on each side of the coronet, causing them to be non-elastic under pressure.

SAND-CRACKS.—Examine the fore feet for these. They are splits in the horn, from the coronet *downwards*. Search well, both with eye and hand, for small sand-cracks round the top of the hoof. They are frequently filled up, and consequently not always easy of detection.

Run your hands down the back *tendons* to see if they are clean and cool, and free from any "thickening." Examine for contracted *heels*, and note whether the *soles* are flat or concave. They should be the latter.

THRUSH.—The exceedingly offensive odour which invariably accompanies this disease enables it to be readily identified. The stench arises from the purulent matter which exudes from the cleft of the frog. A horse suffering from thrush is not necessarily lame.

CANKER.—This results from neglected, or improperly treated, thrush.

QUITTOR.—This is a fistulous wound in the coronet, the primary cause of which, as a rule, is the habit of treading with one foot upon the other.

SEEDY-TOE is evidenced by a bulging out of the wall of the foot, generally near the toe, and is associated with a soft, cheesy kind of horn.

BRUISED SOLES AND CORNS.—Have the animal's fore shoes taken off, and examine for bruised, thin, or weak soles. Tap the hoof with a hammer, and squeeze the soles with a pair of blacksmith's pliers, and if the horse does not flinch you may assume that its feet are sound. For corns, look for signs of the knife on the soles, usually near the bars inside the heels.

FOUNDER.—This is inflammation in the feet. If a horse has suffered from it, its hoof will be concave in front and have seams or lines running round the outside, and *converging towards the heel*, namely to a common point. If the lines run *parallel* with the coronet, they may be natural and consequently of less significance.

Examine the belly and the inside of the thigh for warts. Look for swollen sheath; pass the hand down the stifle-joint, which, owing to its liability to injury from collision with door posts, etc., is frequently the seat of disease. When free from disease, this joint should exhibit the same action in walking as in trotting.

THE HOCK.—You have now arrived at this, the most important joint in

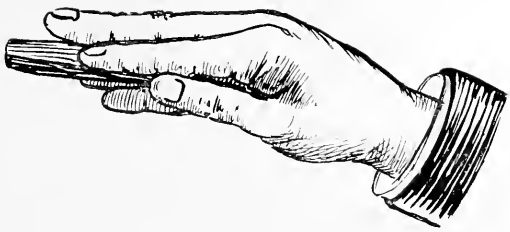

Diagram 65.—How a Physic Ball should be Held.

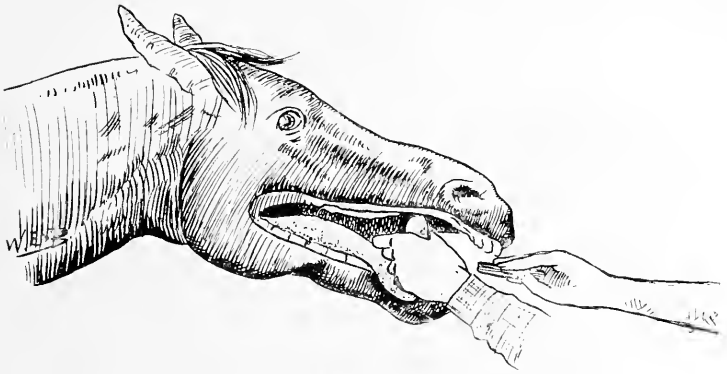

Diagram 66.—A Correct Illustration of the Operation of Administering a Ball.

the animal, the one most likely to be the seat of disorder, and certainly the one which is the most difficult to examine for unsoundness. Its principal ailments are the following :—

Thoroughpin.—This is the name given to certain round swellings on the inside and outside, and immediately under, the strong tendon which unites with the cap of the hock. The swellings are similar in nature and appearance to *windgalls.*

Windgalls.—Appear on the fore as well as the hind legs, just at the fetlock joints, but should not be considered as evidence of unsoundness, but simply as proof that the horse has done continuous and hard work. In fact, it is a common remark that "a wind-galled leg never goes lame"—a sweeping statement which I should hardly care to endorse. If the swellings attain a very large size they constitute a very unsightly blemish, which always exercises a considerable influence on the selling price, on the ground of unsightliness.

Capped Hock.—This is a swelling at the extreme point of the hock. It is generally produced by the habit of kicking when in the stable or in harness; and, on the other hand, the pain resulting from a capped hock, recently developed, may *cause* the animal to kick, especially in the case of heavily-loaded draught horses. A capped hock seldom causes lameness, but it is always an ugly defect.

Sallenders.—These are scurvy eruptions on the inside of the hock. Unless grossly neglected they do not produce lameness.

Curb (see Plate 60, Diagram 60).—This is a swelling located some few inches below the point of the hock, and can be best detected by taking a side view of the hind legs. I may here remark that unless the general conformation of the hind legs and quarters of the horse are considered good I would waste no time in examination of parts.

Cow-hocks.—"Curby" horses are frequently cow-hocked. The appearance of their hind legs may aptly be compared to that of the legs of a knock-kneed, splay-footed man.

Bone-spavin (see Plate 60, Diagram 59).—This is really a bony enlargement on the lower part of the inside of the hock-joint. As there are many, particularly in the Colonies, who are quite unable to diagnose this disease, an extended explanation of the proper methods of doing so may be useful. The enlargement is of bony hardness, and may be

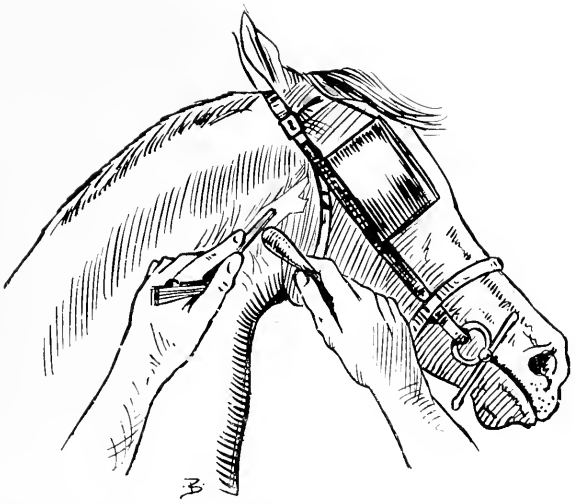

Diagram 67.
The Operation of Bleeding from the Jugular Vein.

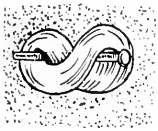

Diagram 68.
The Figure 8, as it should be Applied after Bleeding.

detected from the front by looking between the animal's fore legs, from behind, from a combined side and rear view, and also by *touch*. The examination should first take place in the stable, before the horse is exercised. Pass one hand down the inside of each hock, and then both hands simultaneously, the reason for this being to enable you to detect any difference there may be in the conformation. A spavin is not too easy to detect when both hocks are similarly affected, but it is a simple matter if only existing in one of them, as there is then a readily noticeable disparity in the respective formations. What are termed " coarse hocks " may have the appearance of being spavined and yet be perfectly free from the complaint. When the horse is being brought out of the stable, look very critically for the least sign of lameness. It is to be noted that a mettled horse suffering from spavin, while going noticeably lame for the first hundred yards or so, will frequently exhibit such slight signs of lameness after that distance that it becomes by no means easy to detect the disease in that way. One very good test is to raise the leg and keep it *well-flexed* for a minute or so, then drop it suddenly and let the animal trot on immediately. Signs of lameness will then, as a rule, be more apparent than before, and at once settle the question. When the disease is of long standing there is a continued flexing of the fetlock-joint while the animal is motionless, and when moving that joint is flexed abnormally to render the bending of the hock-joint (which would cause the animal pain) unnecessary. Careful watching will always reveal an apparent stiffness in the hock when spavin is present. When watching for signs of lameness, always have the animal trotted quietly *from and to you*, not laterally in front of you. Note that a well-formed hock-joint tapers gradually down to the shank.

Rick, or Chink in the Back.—This injury can be detected by pressing the thumb and fingers along each side of the spine as far as the loins; if the animal flinches and crouches badly, by some it would be considered unsound.

Wind.—After having satisfied yourself that there are no indications of spavin, and no signs of lameness whatever, the next step is to have the horse saddled and galloped, to test the soundness of its wind.

Broken Wind will be evidenced if the animal makes two expirations for each inspiration. It is generally accompanied by a hard, dry, husky cough, differing completely in its character from that of a common cold. If suffering from broken wind, the animal may be made to cough by pinching the gullet, near the jaw.

Thick Wind.—This is indicated by short and rapid breathing when the animal is standing. The symptoms become greatly exaggerated by exercise.

Roaring.—This may be easily identified by the peculiar sepulchral noise, combined with a whistle, which proceeds from a "roarer's" nostrils when it is galloped.

A Whistler emits a peculiar, shrill sound when galloped.

Grunting.—The name of this complaint indicates its nature. You may ascertain whether it exists or not by holding the horse and threatening to strike it on the ribs with a stick, by galloping it, or, if a hunter, by jumping it.

NOTE.—When testing a horse for any affection of the wind or lungs, or for lameness, it is always advisable to do the riding yourself.

BRUSHING ON FETLOCKS.—Colts frequently "brush" when being trained to work, and may never do so afterwards. The habit may also be simply the result of weakness. But if the brushing is on the fore fetlocks, and appears to be a *confirmed habit*, do not waste any further time over examination.

NAVICULAR DISEASE.—This attacks the fore feet only, and shows itself by the animal always fidgeting from one foot to the other when standing and also in lameness. Let the horse stand for fifteen or twenty minutes in the stable, and when it is brought out, observe its action carefully. If it has the complaint, and has had it for some time, its fore feet motions will be very "tottery" and cat-like. The disease is very prevalent in Great Britain, and has been, I am informed, on the increase for years past.

I trust the above summary of the common ailments of the horse, and of the means of detecting them, will prove useful to the inexperienced buyer. I have only to supplement it by a few words of general advice. If you are negotiating for a light harness-horse, insist upon trying it upon your own premises. If buying a draught-horse, do not be persuaded to have the wheels of the dray locked, as many a jibbing horse, which would refuse to stir if the wheels were loose, will pull under those conditions. If it be a hunter you are testing, ride it yourself. Try its pace over *rough* ground, and observe how it puts its feet down. Test its jumping powers. Insist upon taking your time over the examination of the animal you contemplate purchasing, and don't be bluffed or chaffed into a hasty and premature decision to buy, or you will very probably find yourself saddled with a bad bargain.

HORSE DENTITION

The "Galvayne" Method of Correctly Ascertaining the Age of the Horse by its Teeth—from Foalhood to Old Age

THE incisor teeth constitute the only reliable guide to the age of the horse.

The molars, except when newly developed, are not to be depended upon as an assistant.

At maturity the horse has forty teeth, the mare generally thirty-six. In the latter the four tushes, or canine teeth, are usually absent, but this is not so always; should the mare have them fully developed, they must be regarded as an abnormality which may occur at any age of the animal.

There is an old fallacy concerning mares with fully developed tushes to the effect that they indicate sterility. As a matter of fact, some mares that have tushes will breed, and some will not. The abnormal development of the tush has nothing whatever to do with barrenness, which must arise from physical causes of an entirely different nature.

The Teeth of the Horse are classed as follows:—

12 Incisors, anterior or front teeth, 6 in each jaw.
4 Tushes, or canine teeth, 2 in each jaw.
24 Molars, 12 in each jaw, 6 on each side.

The two front are known as the "two centrals," the next two, viz., those on either side, the "two middles"; and the two outside, i.e. the third in position on either side, are termed the "two corners."

The Foal.—At the time of birth, or within a few days afterwards, the foal has the two central incisors (see Plate 64, Diagram 72). In from fourteen to twenty-one days the two middles appear, and about two months after their appearance they become level at the crown with the two centrals (see Diagram 73). At about the age of six months the two corners appear (see Diagram 74). When first developed they are always narrower than the centrals and middles. The outside walls of the corner teeth are generally level with those of the middles and centrals when the colt has attained the age

PLATE 63.—SHOWING HOW THE LOWER INCISORS ARE PLACED IN THE LOWER JAW, AND THE DIFFERENCE IN FORMATION BETWEEN TEMPORARY AND PERMANENT TEETH.

Diagram 69.
The Shape of Temporary or Colt Teeth.

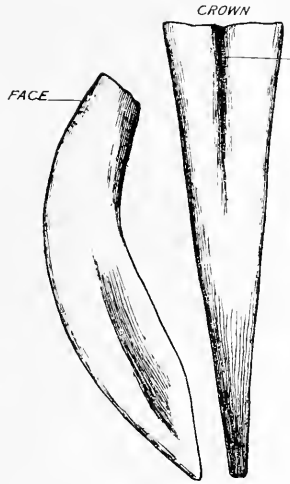

Diagram 70.
The Shape of Permanent or Horse Teeth.

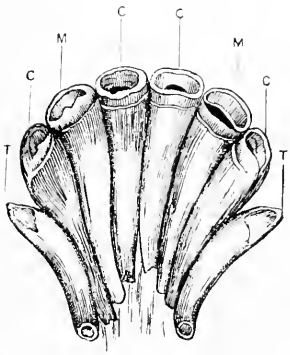

Diagram 71.
Showing the Formation of the Incisors in the Lower Jaw of the Horse.

PLATE 64.—FOUR DIAGRAMS OF FOALS' TEETH FROM BIRTH TO EIGHT MONTHS OLD.

Diagram 72.
Foal's Mouth at Birth.

Diagram 73.
At Three Weeks Old.

Diagram 74.
Outside View of Lower Jaw at Six Months.

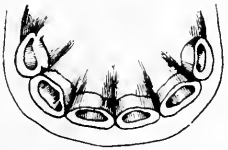

Diagram 75.
Inside View of Lower Jaw at Eight Months.

PLATE 65.—FIVE DIAGRAMS OF THE LOWER INCISORS FROM ONE YEAR UP.

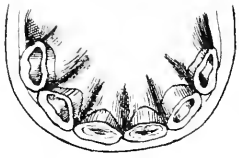

Diagram 76.
Inside View of the Lower Jaw
at Twelve Months.

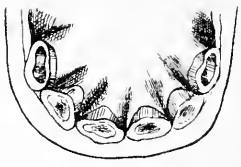

Diagram 77.
Inside View of the Lower Jaw
at Eighteen Months.

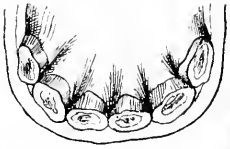

Diagram 78.
Inside View of the Lower
Jaw at Two Years, off.

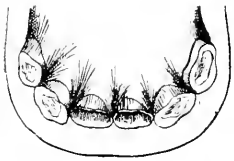

Diagram 79.
Inside View of the Lower Jaw
at Rising Three Years.

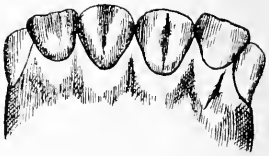

Diagram 80.
Outside View of the Lower Jaw
at Rising Three Years.

PLATE 66.

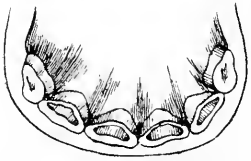

Diagram 81.
Inside View of the Lower Jaw
at Four Years.

Diagram 82.
Outside View of the Lower Jaw
at Rising Four Years.

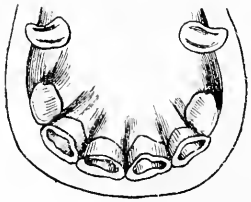

Diagram 83.
Inside View of the Lower Jaw
at Four-and-a-half Years old,
showing Development of
Corner Teeth.

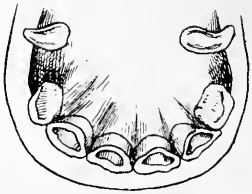

Diagram 84.
Inside View of the Lower Jaw
at Five Years old, showing the
levelness outside Wall of the
Corner Teeth.

of eight months (see Diagram 75). From this age very little change can be observed in the appearance of these teeth, except that they gradually show more wear, and become smooth at the crowns.

At one year of age the "cups" (or what is technically known as the infundibulum) in the crown of the teeth have disappeared from the two centrals (see Plate 65, Diagram 76) at eighteen months from the two middles (see Diagram 77), and when the animal is two years old, a similar change is observed in the two corners, so that by this time all the crowns of the lower incisors have become flat and smooth (see Diagram 78).

These changes in the appearance of the incisors render it possible to distinguish an early foal from a late one when judging at the usual "foaling" period by noting the size of the "cups" (if there are any) in the corner teeth. I have only referred hitherto to the incisor teeth in the lower jaw of the foal, but, as a matter of fact, the temporary incisors appear simultaneously in both jaws.

The Colt and Filly.—*Development of the Permanent Incisors (lower jaw only).*—The incisors previously described belong to foalhood only, and are sometimes referred to as "sucking" teeth, but "temporary" is the correct term. They differ materially from the incisors of the horse, which are generally described as "permanent" teeth. Temporary incisors are semi-circular in shape, and smooth like a finger-nail, with a decided "shoulder" and fang (see Plate 63, Diagram 69). The permanent incisors are wider at the crown than at the gum, the decrease of the width being gradual until the gum is reached (see Diagram 70). It is quite a different shaped tooth from the temporary incisor, although the one is often mistaken for the other, even by those who ought to know better.

Some writers have attached value to colour as a distinction between temporary and permanent incisors; it is a mistake to do so, as it is absolutely no guide whatever; if the enamel of either tooth is rough, it will become stained and darkened in colour.

The lower central and middle permanent incisors have a well-defined groove running down the centres in front (see Diagram 70). A frequent error made by writers on Horse Dentition is the statement that *all* the permanent incisors, when first developed, have this groove. The truth is that neither the corner incisors in the *lower* jaw, *nor any* of the *upper* incisors, have any decided groove when they first appear. These

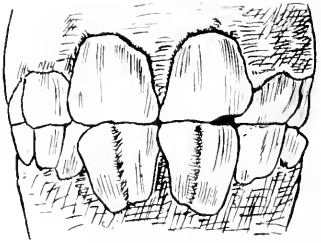

Diagram 85.
Front View of both Jaws of a Three Year Old.

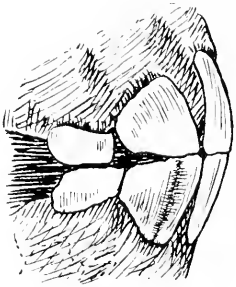

Diagram 86.
Side View of both Jaws of a Four Year Old.

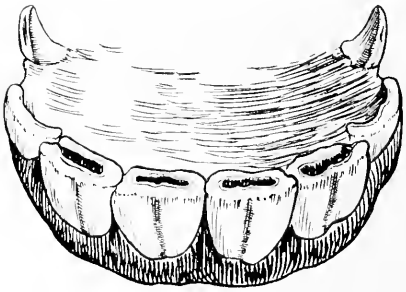

Diagram 87.
A Top and Front View of the Lower Incisors at Five Years of Age.

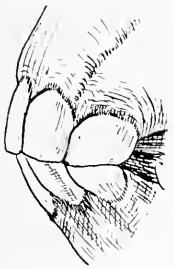

Diagram 88.
Side View of both Jaws at Five Years of Age.

Diagram 89.
Inside View of Lower Incisors at Five Years of Age.

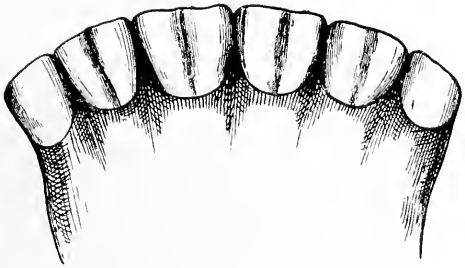

Diagram 90.
Front View of Lower Jaw at Five Years of Age.

teeth may occasionally exhibit facial irregularities in the enamel, with the result that they become dirty in appearance, and may mislead; but a close inspection will reveal the fact the rough irregularities are *not* what could be termed a straight well-defined groove.

The development of the permanent causes the displacement of the temporary teeth. This transposition is effected by the actual absorption of the fangs of the temporary incisors by the permanent incisors. The process of absorption commences soon after the animal is two years of age, and takes place first in the two centrals; these will show a slight contraction, also a discoloration and a *separation*. The colt is then known technically as a "*two-year-old-off*." When the absorption, or wasting away, of the fang of the colt's tooth is completed, the remaining portion falls off, and the "horse," or permanent tooth, is apparent. The colt is then known as "*rising three*" (see Diagram 79). The permanent centrals are at first very sharp, the top edges being semicircular in shape. Diagram 80 shows the external appearance of the lower jaw of a colt "rising three years."

At the age of three years the two permanent centrals are *level* with the two middle temporary teeth (Plate 67, Diagram 85).

When absorption becomes noticeable in the two lower middles, the colt is "three off"; when these teeth have "dropped," the animal is said to be "rising four." (Plate 66, Diagram 82, illustrates the outside view of the lower jaw of a "rising four-year-old," after the shedding of the temporary middles.)

At four years of age the two permanent middles are quite level with the two permanent centrals (see Diagrams 81 and 86). When absorption is observable in the two lower "corners," the colt is termed "four off"; when these teeth are "cast," it is known as "rising five" (see Diagram 83, which shows a partial development of the corner permanent teeth).

At five years of age the outside walls of the lower permanent corner teeth, although thin, have become *level* with the centrals and middles (Plate 67, Diagram 87). Plate 66, Diagram 84, represents the inside appearance of the lower jaw of the horse at the age of five years. The colt has now, technically speaking, become a horse, and the filly a mare. It is to be noted that, although I have used the word "colt" throughout, the indications and deductions apply equally to colt and filly.

The reader is also requested to bear in mind that, from two years old off up to five years, my system is based upon the appearance of, and changes in, the *lower jaw* only. The permanent incisors in the upper jaw are generally developed in advance of those in the lower, and also somewhat irregular as to date of development. They are not, therefore, to be relied upon as an indication of exact age.

The Teeth of the "Horse."—At the age of five years, as previously remarked, the colt becomes, technically, a "horse." All its incisors are complete and fully developed, and from this time forward the only means of correctly ascertaining the age is by carefully noting and thoroughly understanding the significance of the various changes which take place in the appearance of the incisor teeth from time to time. Plate 68, Diagram 89, shows the inside of the lower jaw of a legitimate five-year-old. It will be noticed that the "cups" are of fair size in the "centrals," and a little larger in the "middles." In the "corners" the outside walls are level, but *thin*, the inside being low (see Plate 67, Diagram 87). The "corners" of the *upper* jaw are much wider than they are deep, and the edges of the outside enamel at the crown are sharp, showing but little wear. The inside walls are very irregular, and generally have a deep notch in them. For side view of both jaws at five years, see Diagram 88.

At six years of age the cups are rapidly leaving the "centrals" (in the lower jaw), and they have also considerably diminished in the "middles." The inside wall of enamel on the corner teeth is now level with the outside wall, which has become thicker. The top "corners" are a *little* wider than they are deep (Plate 69, Diagram 92, illustrates the inside of the lower jaw of a six-year-old). Diagram 91 shows side view of both jaws at six years.

At seven years of age the "cups" have entirely disappeared from the centrals, and are very small in the "middles." The inside walls of the lower corner teeth now show considerable wear, and the outside wall has also become considerably thicker. The top corner teeth are square, and *deeper* than they are wide (Plate 70 shows the inside of the lower jaw of a seven-year-old).

At eight years of age the cups have disappeared from the "middles" as well as from the centrals. There only remain very small cups in the

Diagram 91.
Side View of both Jaws at Six Years of Age.

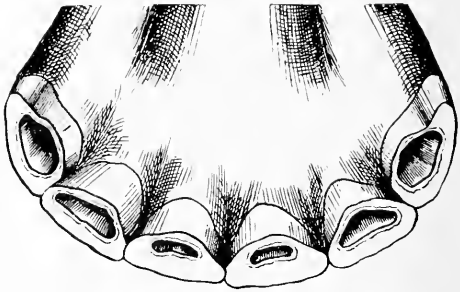

Diagram 92.
Inside View of Lower Incisors at Six Years of Age.

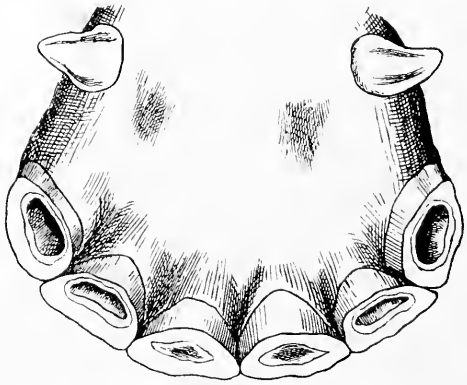

Plate 70.—Inside View of the Lower Jaw at Seven Years Old.

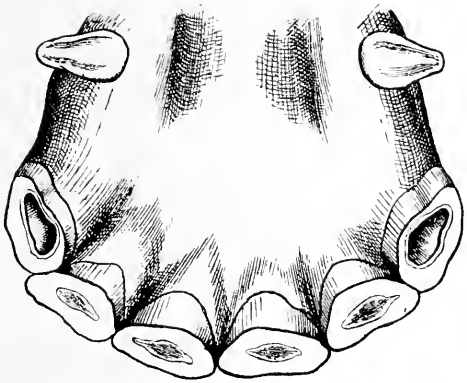

PLATE 71.—INSIDE VIEW OF THE LOWER JAW AT EIGHT YEARS OLD.

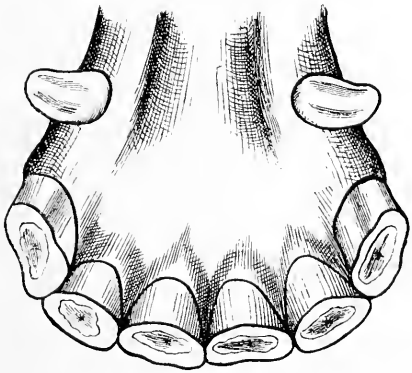

PLATE 72.—INSIDE VIEW OF THE LOWER JAW AT NINE YEARS OLD.

corner teeth, the outside walls of which have become very much thicker—quite twice as thick as at the age of five years.

In the *inside* wall of the *upper* corner teeth, at the age of five years, there is (as before observed) usually a *deep notch,* or indentation. This gradually wears away, but there is generally a portion of it still perceptible to sight and touch right up to the age we are now dealing with, namely, eight years (Plate 71 shows the inside of the lower jaw of an eight-year-old).

At nine years of age the cups will have disappeared from the incisor teeth of the lower jaw (see Plate 72, which illustrates the inside of the lower jaw at this age). The inner and outer walls of the *top* corner teeth will be level, the inside being generally thinner than the outside.

At this age (nine years) the possibility of determining the age of a horse from its teeth was supposed to have ceased. Hitherto all has been mere conjecture or guess-work, and the assurance of the seller has had to be ultimately accepted. But I have demonstrated beyond a shadow of a doubt, on hundreds of occasions in public, that my system, intelligently grasped and carefully applied, enables the age of almost every horse to be accurately read up to thirty years (and even over) by the merest novice in equine matters. A knowledge of my system is easily acquired, and is invaluable to all horse-purchasers.

Reading the Age from Ten to Thirty Years.—In the jaws of the horse there is constantly taking place a process of absorption, called the absorption of the alveolus, technically known as the alveolar process (the alveoli are the sockets in which the teeth are placed). This *alone is answerable* for the constant changes taking place in the appearance of the teeth.

When the lower permanent incisors are first developed they are quite twice as wide across as they are thick through. In a thirty-year-old horse they are just the opposite, namely, twice as thick through as they are wide across. In the young horse the teeth are nearly perpendicular. In the old one they are at an angle of thirty to forty degrees, according to age. When first fully developed the lower centrals are usually nearly three inches long; between the ages of five and fifteen years, i.e. in the first ten years of maturity, they wear away to the extent of quite three-quarters of an inch. In the second ten years, from fifteen to twenty-five, they further diminish in length by nearly three-quarters of an inch, so that at the age of twenty-five they will actually be about one and a half inches shorter than they were

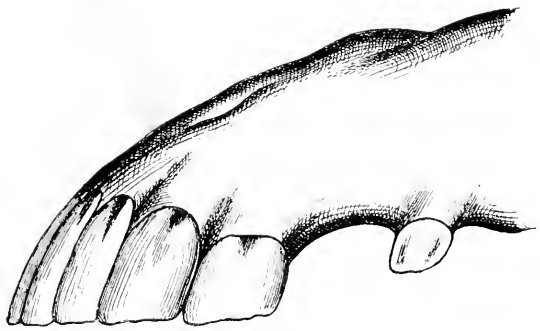

Diagram 93.
Side View of the Top Jaw at Ten Years of Age.

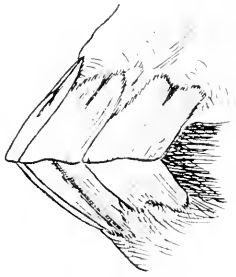

Diagram 94.
Side View of both Jaws at nearly Twelve Years of Age.

at the age of five (see Plate 78, Diagrams 103 and 104). Then, again, in an old horse the gums have become atrophied, until there are only *narrow remains* of them running up between the incisors (see Plate 74, Diagram 96). In a young animal the gums are full and circular in formation round the teeth.

As the animal becomes older the incisors constantly, but almost imperceptibly to the uneducated eye, increase in *thickness*, and become narrower across the face, so that, at about the age of twenty years, the thickness through of the two centrals is approximately equal to the width.

To ascertain the age of any horse, the *examination* must commence with the *lower jaw* (for reasons already given), and may be summarized as follows :—

From Foaling to Nine Months.—Indications furnished by the development of the temporary incisor teeth.

From One to Two Years.—Disappearance of the cups in the temporary incisor teeth in the lower jaw.

From Two Off to Five Years.—The development of the permanent incisors in the lower jaw.

From Five to Nine Years.—The gradual disappearance of the cups in the lower permanent incisors.

From Ten to Twenty-one Years.—The thickness through of the lower central incisors in comparison with the width.

From Twenty-one Years Upwards.—Indications are furnished by the depth in comparison with the breadth of the central incisors, in conjunction with the *angle* of the teeth, which has gradually become more and more acute.

Now, diverting the attention to the *top jaw*, we observe that, at the age of *ten years*, a V-shaped *groove* commences to appear in the *upper corner* teeth. Irregularly shaped grooves also appear in the centrals at the age of eight years, and in the middles at nine years, but I attach little importance to these, owing to their comparative irregularity. But the *groove in the corner incisors of the upper jaw* is most valuable as the principal auxiliary in ascertaining the age of the animal. In stallions, and animals that have been exceptionally well cared for, this groove may appear at the age of nine and a half years, the development of the teeth having been artificially forced. It almost always makes its appearance at about ten years of age, and takes

exactly eleven years to reach the bottom of the teeth; *the portion of the tooth which contains the continuation of the groove gradually becomes visible in consequence of the natural and regular absorption of the alveolus.* The tooth is not only grooved, but the alveolus is shaped to fit it, having a rib running from end to end of the groove. The horse will be twenty-one years of age when the groove is visible from end to end. In the case of certain horses which, having acquired stable vices, may have unduly worn away their upper corner teeth, you must, if you see the lower end of the groove has been abruptly terminated, mentally replace the tooth as it should normally appear, and judge accordingly.

Plate 73, Diagram 93, depicts the side view of the upper jaw of a ten-year-old, showing the groove just appearing.

Plate 73, Diagram 94, illustrates the groove at the age of nearly twelve years.

Plate 74, Diagram 95, shows the groove about half-way down. The animal is now about fifteen years of age.

Plate 74, Diagram 96, exhibits a side view of the top jaw of a horse at the age of twenty-one years, showing the groove running right from the edge of the gum to the bottom of the tooth.

It is to be observed that occasionally there are irregularities in the facial enamel of the upper corner teeth, as there may be in any other of the incisors, and these irregularities may be in contact with the groove, giving it a split or forked appearance, and making it appear, at a superficial glance, longer than it really is. In such cases the groove must only be reckoned to extend as far as the bifurcation, as the true groove is *even, well-defined, and never splits.*

Plate 75, Diagram 97, shows the *inside* of the *lower* incisors of a horse from twenty-five to twenty-six years of age. It will be observed that the teeth have now become much thicker from front to back than they are wide across. Plate 75, Diagram 98, illustrates the *outside* appearance of the lower incisors at the same age.

Plate 76, Diagram 99, gives a side view of the top jaw at the age of twenty-five to twenty-six years.

After the age of *twenty-one years* the upper part of the top corner incisors commence to show a round formation, and are in all cases *devoid of the groove.* That part of them also becomes of a dirty yellow colour. This colour is caused by the portion of the tooth which is now exposed being devoid of

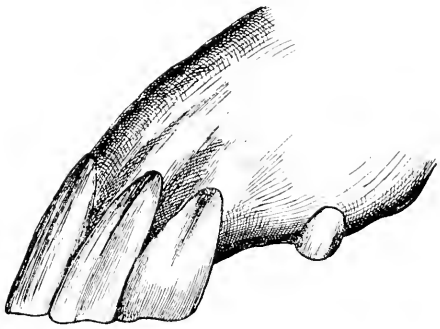

Diagram 95.
Side View of Top Jaw at Fifteen to Sixteen Years of Age.

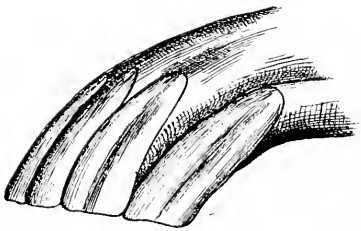

Diagram 96.
Side View of Top Jaw at Twenty-one Years of Age.

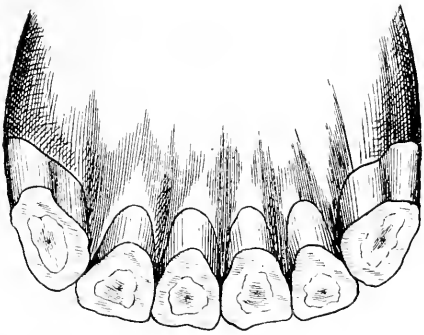

Diagram 97.
Inside View of Lower Incisors at Twenty-five to Twenty-six Years of Age.

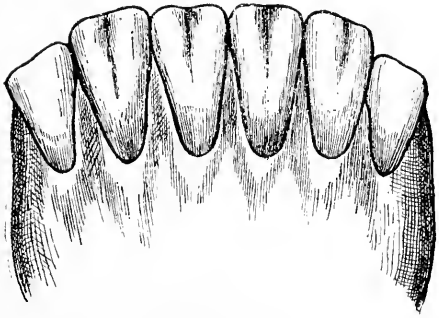

Diagram 98.
Outside View of Lower Incisors at Twenty-five to Twenty-six Years of Age.

enamel ; the exposed dentine is soft and porous, so is more readily stained by contact with food, hence its discoloration. The longer the comparative length of the rounded and discoloured part, the greater will be the age of the animal. For instance, at the age of thirty years, the roundness and discoloration generally extends half-way down the tooth.

Plate 76, Diagram 99, illustrates the top corner tooth when the horse is between 25 and 26 years. The dark shading indicates the rounded portion.

Plate 76, Diagram 100, shows the inside of the lower jaw when the animal is thirty years of age. It will be noticed that the depth of the teeth is much greater than the width.

Plate 77, Diagram 102, depicts the side view of the lower jaw at thirty years. Attention is specially directed to the angle of the teeth in the jaw.

Plate 77, Diagram 101, gives a side view of the top jaw at the age of thirty, showing the rounded portion of the upper corner teeth to be rather more than half-way down.

As horses rarely live beyond the age of thirty years, I do not think it would serve any useful purpose to go beyond that age.

To sum up, the examiner who desires to ascertain the age of a horse over five years from an inspection of its teeth must first examine the incisors in the lower jaw—for *cups*. If the cups have disappeared, careful note must be made of the *shape* and *angle* of the teeth. The attention must then be directed to the upper "corners" for the *groove* ; should the groove in one of the corners appear a little longer than the one in the corresponding position on the other side of the jaw, a balance must be struck between the two—the average length being taken as the basis from which the age must be deduced. If the reader has carefully perused the instructions and indications I have furnished, and thoroughly studies the gradual changes in the teeth as shown in the Plates, the appearance of the teeth in the lower jaw, considered in conjunction with the groove in the corner incisors of the upper jaw, will enable him to ascertain the closely approximate, if not the absolutely exact age of any horse. My reason for this qualification is that some allowance must, of course, be made for the personal equation. A man whose whole life has been spent in close association with horses will naturally be able to speak and judge with greater confidence than one to whom the subject is comparatively new and strange ; but from the indications I have given *any one* will be enabled to declare the age of a horse from ten years

to thirty *within a year*, if not always with absolute precision ; and considering the frequency with which a purchaser is deceived in the matter of age, and to what a great degree such deception is possible (apart from my system), I think I am justified in claiming that my discovery is of great value to all horse buyers.

With regard to myself, speaking as a public man whose statements are easily open to confirmation or contradiction, I can state that during a tour of five years, covering the greater part of Great Britain, holding private classes, and giving public exhibitions daily of my system of age-reading, *there is no record of my having made a single mistake*. This, I think, will be regarded as tolerably conclusive proof of the practical value and reliability of my system.

From many hundreds of instances which I could enumerate, did space permit, I select the following :—

A certain well-known Yorkshire farmer boasted that he possessed a horse, the age of which " neither Mr. Galvayne nor any other man could tell within five years, and that he would bet five pounds on it." One of my pupils took up the challenge, and covered the farmer's money. The animal was duly sent to my place of business, accompanied by a sealed envelope containing its attested age, addressed to the stakeholder. Had I known of the wager, I should have refused to make any statement ; but being in ignorance of it, I closely examined the horse's teeth, and finally declared it to be between twenty-five and twenty-six years of age. The sealed envelope was opened, and found to contain the following declaration : " I hereby certify the black and white horse to be twenty-five years old *last grass*." The stakes were promptly handed over to my pupil.

A rather amusing incident occurred in connexion with one of my pupils, a Yorkshire squire. I mention it as illustrating how easily my system is acquired. The gentleman referred to, after *one* lesson in my marquee, vaulted over the fence of the field and stopped the first horse that came along the road. It chanced to be an old grey, in a cart. The " squire " stopped the conveyance, looked at the animal's teeth, and said to the driver, " Your horse is *twenty-five years* old." " No, he ain't," indignantly replied the old man, " he's *only twenty-four*."

Another of my pupils was not quite so fortunate. He once made a bet that he would state the correct age of a certain old mare. When the staked

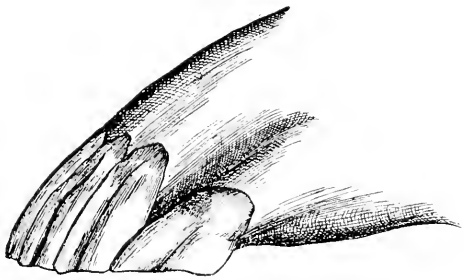

Diagram 99.
Side View of Top Jaw at Twenty-five to Twenty-six Years of Age.

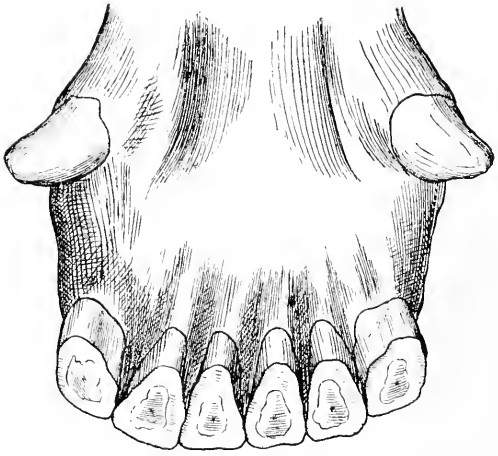

Diagram 100.
Inside View of the Lower Incisors at Thirty Years of Age.

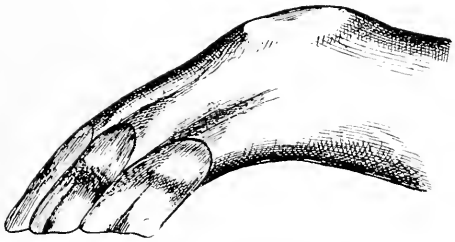

Diagram 101.
Side View of Top Jaw at Thirty Years of Age.

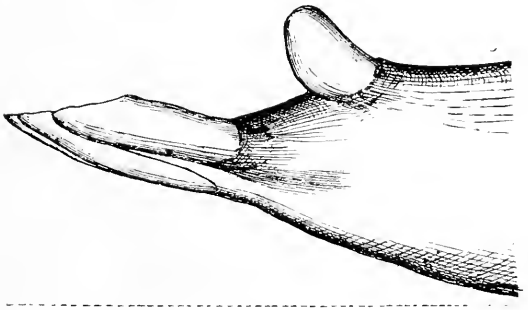

Diagram 102.
Side View of Lower Jaw at Thirty Years of Age.

money was duly deposited and the animal brought to him, he at once opened its mouth and commenced his examination—full of enthusiasm and confidence. To his disgust, however, he saw that the horse had not a single incisor tooth left for him to judge by, so he had to join in the general laugh against himself, and acquiesce in the payment of the stakes to his opponent. His mistake was that he relied upon finding in every horse's mouth all the indications from which the age is deducible. This, of course, is not always the case. Accident, etc., may deprive the animal of some of the features which furnish the information, but even accidents usually leave sufficient to judge by.

I may also mention an incident at Darlington, as another proof of the success of my system. An old mare was trotted into my marquee, both to test my own pretensions and also the benefits which my pupils had derived from my tuition. I first of all asked the members of my class to state their respective opinions of the mare's age on paper, without any consultation with myself or each other. This was done, and the papers were folded up. The owner came straight to me and said, "What's her age?" I at once replied, "Twenty-six to twenty-seven." This was correct; and when the papers of my pupils were opened, many were found to be equally accurate, and not one of them was more than two years out.

Some of my Huddersfield pupils, with the idea of "taking a rise" out of "the Colonial," brought me the jaw of an animal which had just been slaughtered. I pronounced the animal to have been between twenty-four and twenty-five years of age. It was twenty-four.

As previously remarked, I could prolong this enumeration of successes *ad infinitum*, but I will conclude it with the following incident, which refers to the oldest animal whose age I have been called upon to declare. H. A. Spedding, Esq., J.P., and Deputy-Lieutenant of the county of Cumberland, brought to me a pair of jaws which originally formed part of the anatomy of a pony that had been buried in 1881. I examined them, and pronounced the animal to have been thirty-seven years old or more at the time of its decease, judging from the top corner teeth, which had the round formation *nearly to the bottom*. Mr. Spedding then said that the pony was exactly thirty-seven years and nine months old at the time of its death.

The Tushes.—These are generally developed in geldings that have been brought up on ordinary feed at, approximately, four years of age, but

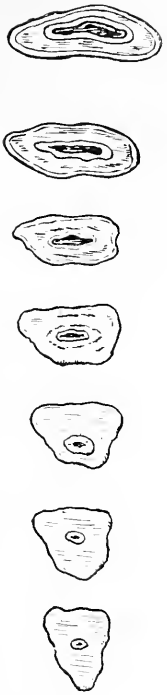

Diagram 103.
Showing the Sections of an Incisor at various Ages from Five to Thirty Years.

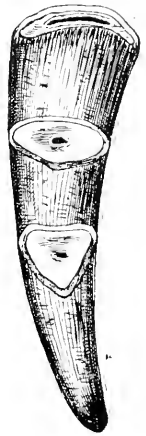

Diagram 104.
Showing Sections at Five, Fifteen, and Thirty Years.

Diagram 105.
Showing a Natural Cup surrounded by the White Enamel.

PLATE 79.

Diagram 106.
Showing an Artificial or Bishoped Cup, not having any White Enamel.

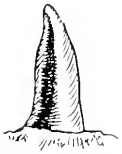

Diagram 107.
A Tush at Five Years.

Diagram 108.
A Tush at Twenty Years.

Diagram 109.
A Tush at an extreme Old Age.

in stallions usually from three and a half years of age upwards. At first they are concave on the inside, with two grooves running upwards, and are sharp at the points and edges ; but with age they usually become shorter, blunter, and more rounded (see Plate 79, Diagrams 107, 108, 109). There are, however, so many variations from this rule, and the changes are so erratic in their occurrence and degree, that they cannot be relied upon to furnish trustworthy indications of the age of the animal. I am aware that, in taking up this position, I am running counter to the views of many writers on the subject. Nevertheless, I maintain my opinion. I have frequently seen what would be considered comparatively young tushes in the lower jaw simultaneously with apparently old ones in the upper. Such irregularities would in themselves suffice to very largely discount the value of these teeth as indicators of age. Moreover, even the writers to whom I have referred, who go so far as to give diagrams of the progressive changes in the appearance of the tushes at various ages, must admit that they are quite useless for perhaps the most important object of the science of age-reading from the teeth, namely, that of ascertaining the age of the *mare*. In the mare the tushes are, as previously pointed out, usually *absent*. If present, they must be regarded as examples of abnormal development, and the age at which they may appear is so irregular that they cannot be regarded as being of any importance whatever in this respect. What, then, is to indicate the age of the mare ? The importance of being able to ascertain her age, at any time in her career, is far greater for the breeder than the ability to ascertain the age of a gelding. The latter's commercial value rests entirely upon the amount of work it is capable of performing, either now or in the future, whilst a mare, although possibly incapacitated from labour of any kind, may be of great value for breeding purposes, if her age be suitable. It is a most common occurrence for farmers to be deceived into purchasing for breeding purposes mares which are stated by the sellers to be only seven or eight years old, whereas, in point of fact, they may be twice that age, or even more. I have personally seen a great many instances of this particular form of swindle, both in England and Australia. In this country, for example, I met two farmers who had purchased respectively two mares for breeding purposes ; one of the animals turned out to be *twenty-three* years of age, and the other *twenty-five*. Again, I came across a clergyman, near Leeds, who was persuaded to buy a cob mare *twenty-seven* years of age, on

the seller's representation that it was " seven off." The value, therefore, of a system which enables any one to accurately estimate the age of a mare can hardly be overstated.

The Upper Incisors.—Efforts have been made by some writers on horse dentition to reduce to a system the disappearance of the " cups " in these teeth, but in my opinion it is quite impossible to do so. There is no regularity in the depth of the cups or infundibulum in the upper incisors. In " parrot-mouthed " horses, the upper jaw, being a fixed one, does not permit of the upper incisors receiving any friction and consequent wear from the lower. Many horses at the age of six or seven have the upper centrals quite devoid of cups, and others, again, may have the cups very large and well-defined at the age of twenty years. Hence it is very obvious that there is no reliance to be placed on the cups of the upper incisors.

Other writers state that the outer wall of the upper corner teeth always exhibit a decided corner " snagg " when the animal is eight years of age. This is also fallacious. I have frequently seen the peculiar formation referred to in animals at the age of six years and upwards to any age.

Doctoring the Teeth.—As it is generally to the pecuniary advantage of the seller of a horse to make it appear to be as near to six years of age as possible, an unscrupulous vendor (and there are, unfortunately, very many such) frequently resorts to the doctoring of the animal's teeth with that object in view. To *increase* the apparent age to the desired degree, the "faker" knocks out the temporary teeth to accelerate the development of the permanent ones. This frequently necessitates the cutting through of the gums, or their entire cauterization, in order to diminish or remove altogether the natural resistance encountered by the permanent teeth in forcing their way through.

The *modus operandi* is as follows: Directly the permanent centrals are *in wear*, the temporary middles are knocked out, and as soon as the permanent " middles " are partially developed, the temporary " corners " are extracted. By this means a rising four-year-old is transformed, to all appearance, into an actual five-year-old, estimating its age by its teeth in the ordinary way.

The fraudulent faking above described can be readily detected by an examination of the " cups " of the incisors. In a genuine five- or six-year-old the cups are *graduated* in size from " centrals " to " corners," but if the

PLATE 80.

Dentition Table

THE HORSE

	LOWER JAW—*Incisors.*			UPPER JAW—*Incisors.*			*Molars.*					
AGES.	CENTRAL.	MIDDLE.	CORNER.	CENTRAL.	MIDDLE.	CORNER.	TEMPORARY. 1.	2.	3.	4.	PERMANENT. 5.	6.
At Birth	Temporary 2 very wide.	. . . .	. . . .	. . . .	. . . .	. . . .	At birth, and very large.	At birth.				
2 to 3 Wks.	. . . .	Temporary 2 appear. very wide.	. . . .	. . . .	. . . .	. . . .	. . .	. . .	Appears			
6 Months	. . . .	. . . .	Temporary 2 appear.									
7 to 8 ,,	. . . .	. . . .	Level.									
11 ,,	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	. . .	. . .	. . .	Appears		
12 ,,	Cups leave.											
18 ,,	. . . .	Cups leave.	. . . .	. . . .	. . . .	. . . .	. . .	. . .	. . .	. . .	Appears	
2 Years	. . . .	. . . .	Cups leave.									
2½ ,,	Permanent appear.	. . . .	. . . .	. . . .	. . . .	. . . .	Permanent appear.					
3 ,,	Level.	. . . .	. . . .	. . . .	. . . .	. . . .	. . .	Permanent appear.	. . .	. . .	. . .	Appears
3½ ,,	. . . .	Permanent appear.										
4 ,,	. . . .	Level.		The Permanent Incisors in Upper Jaw are, as a rule, developed in advance of those in the Lower.								

	LOWER JAW—*Incisors.*			UPPER JAW—*Incisors.*			*Molars.*					
							Temporary.			Permanent.		
Ages.	Central.	Middle.	Corner.	Central.	Middle.	Corner.	1.	2.	3.	4.	5.	6.
4½ Years	. . . .	. . . .	Permanent appear.	. . . .	. . . .	. . . .	. . .	. . .	Permanent appear			
5 „	. . . .	. . . .	Level.	. . . .	. . . .	Much wider than long deep notch in inside wall.	. . .	. . .	Small.			
6 „	Cups small.	. . . .	Inside and outside wall level.	. . . .	. . . .	Little wider than long.	. . .	. . .	Level.	. . .	. . .	Level.
7 „	Cups gone.	Cups small.	Inside wall shows wear.	. . . .	. . . .	Square or longer than wide.						
8 „	„ „	Cups gone.	Cups small.	Irregularly formed groove appears.	. . . .	Notch nearly worn out.						
9 „	„ „	„ „	Cups gone.	. . . .	Irregularly formed groove appears.	Inside and outside wall level.						
10 „	„ „	„ „	„ „	. . . .	. . . .	A regularly formed groove appears.						
13 „	„ „	„ „	„ „	. . . .	. . . .	About quarter of the way down						
15½ to 16 Years	„ „	„ „	„ „	. . . .	. . . .	Half-way down.						
About 18 Years	„ „	„ „	„ „	. . . .	. . . .	Three-quarters of way down.						
21 Years	„ „	„ „	„ „	. . . .	. . . .	Reaches the bottom.						
22 „	„ „	„ „	„ „	. . . .	. . . .	Face of Tooth commences to get round.						
25 to 26 Years	„ „	„ „	„ „	. . . .	. . . .	Round quarter of way down.						
30 Years	„ „	„ „	„ „	. . . .	. . . .	Round half way down.						

teeth have been doctored in the above manner, *the cups in the centrals will have quite gone*, while the cups of the middles will be fully developed. The explanation of this is that the friction resulting from the use of the jaws has been concentrated entirely upon the crowns of the two centrals, whereas in the ordinary way it should have been distributed over the surface of the crowns of six teeth. The wear and tear, therefore, on the crowns of the centrals has been greatly in excess of what it would have been had not illegitimate practices been resorted to, and in comparison the cups of the two middles are full-sized, showing little or no wear.

In order to *decrease* the apparent age of the horse to the requisite degree the " doctor " resorts to the process of

" *Bishoping.*"

The nature and object of this operation will at once undeceive the reader, should he jump to the conclusion that its originator was an ecclesiastic, or was in any way identified with holy orders. It is generally performed in the following manner : The horse is first secured, then with a sharp engraving tool " cups " are cut into the crowns of the lower incisors. These cups are graduated in size, in order to represent as nearly as possible those in the teeth of a genuine six-year-old. The holes are then filled with rosin, after which a red-hot V-shaped iron is thrust into the cavities to blacken them. By this process, however, the *white enamel* (see Plate 78, Diagram 105), which always surrounds the natural cup, is *destroyed*. All that remains to be seen is a black, dirty, dead-looking cavity, the discoloration gradually dying away until the original colour of the tooth is reached (see Plate 79, Diagram 106), and by this unnatural appearance of the cup the " bishoping " can be detected.

BARRENNESS IN MARES

ASSUMING that the barrenness is not due to any malformation of the womb, it usually arises from one or more of the following causes—namely, neglect to "try" the mare after she has been served, overwork, broken wind, a chronic cough, or overfeeding with corn. Nonconception may also result from taking the mare hurriedly, and a long distance, to the stallion to be served. She should be taken quietly, and the distance to the horse and home again should not exceed ten miles. After being served she should be stabled for two or three hours. Cooling food should be given, and she should only be allowed to do light work during the three weeks after the serving, in order to minimize the liability to accident. It is not wise to allow geldings to run with mares that have been recently served, or even for some weeks prior to the service.

With regard to mares not coming in season, there is but one remedy for this. Confine the mare, or apply No. 1 Twitch, and let the stallion serve her. She will then, in all probability, come in heat within a few days. This is specially applicable to young mares.

MARES FOALING

Their Symptoms and Treatment and the Early Management of the Foal

DURING the latter period of gestation the mare should be well fed and, if stabled, should have plenty of regular daily exercise. "Idle" mares may be kept at grass, but they should have access to a shelter-shed for protection in wet or severe weather. Mares which have the range of a large pasture will naturally take sufficient exercise of their own accord.

During the winter and spring there should be placed daily in a manger in the shed: 4 lb. of crushed oats or maize, 2 lb. of bran mixed with a small quantity of good chaff, with some clean hay, or root food. There should also be a permanent supply of rock salt.

Insufficiency of food is a frequent cause of abortion, and a well-developed and healthy foal is not to be expected unless the mare be kept in good condition.

The period of gestation is usually about 335 days. A month before the mare's time is due she should be brought in under cover at night if the weather be cold. The udder should be carefully inspected every day, to note any change in its appearance. Some mares do not drop their udder and "show" until a few days before foaling, and in such cases they require special care and watchfulness. The attendant must be guided by the dropping of the quarters, which generally takes place about two days before foaling.

As a rule, however, the udder commences to "show" about a fortnight before foaling; in some cases three weeks before. It continues to increase in size until *wax* appears. This is a yellow substance which remains on the teats about a day, and then drops off. Milk now appears in the great majority of cases, and continues to drip. Sometimes, however, a mare will "wax," and the wax will drop off, without being followed by milk; she may then go some time before waxing again—perhaps a fortnight, or even three weeks.

When the milk once appears, the mare requires attention every hour or so. When she begins to show signs of uneasiness, and smell about, foaling may be expected at any time, and she should not be left alone for more than fifteen minutes at a time.

It is of great importance that the mare should become accustomed to one particular attendant during the few days preceding foaling, so that she will not be nervous at his entering and leaving the stable ; and the attendant should enter very carefully and cautiously, otherwise the mare, if she should chance to be down foaling at the time, will be apt to become alarmed, and jump up. Let the foaling take place in as roomy a place as possible. When the doors of the box open *inwards*, it is advisable to have some other entrance for the attendant, as the mare might be lying down against the door, making it impossible to get to her.

A draught-mare may be worked safely, and even with advantage, almost up to the very date due for foaling, provided it be done judiciously and with *moderation*.

If not watched, the mare may go down to foal with only a distance of a foot or two between her tail and the side of the box. In such a case it will be necessary to get her up again, if practicable. Should she have got half way through her foaling, in such a position, it will be best, if assistance can be obtained, to pull her round *by the tail*, while lying down.

When the actual foaling commences the first thing which should appear is the " water-bladder," followed by the fore feet and nose of the foal. When the feet are far enough out, the attendant must take hold of them, and then break the bladder with the finger. He may assist the mare by gently pulling the legs of the foal, straight and steadily, just at the time when the mare heaves.

As soon as the foal is born, the string should be tied close to its belly and should be cut close to the knot. The next thing is to draw the foal up to the head of the mare, and let the latter smell and lick it. She may then be given a bucket of warm (not hot) oatmeal gruel, while lying down, and left alone for half an hour, after which some warm mash may be given. As soon as the foal has sucked, the two may be left to themselves—the quieter the better.

The above is an outline of the general treatment of mares when things proceed normally. When complications occur, such as the foal being pre-

sented the wrong way, hind legs first, or with the head doubled back, it will usually be found that the bag does not appear first—as it ought to do ; and in all such cases of irregularity a veterinary surgeon or other qualified help should be sent for at once. The same course should also be adopted if the mare appears to have unnatural difficulty in delivery, or take an abnormally long time over the operation. Ordinarily speaking, a mare should *not be longer than thirty minutes or so in labour*, and, in many cases, the foal is born within ten minutes.

For the first week after foaling the mare should be fed on sloppy food, composed of oats, or maize, root food, and cut chaff, which should be steeped and given lukewarm. The mare and the foal should be kept in a roomy box for the first few days, if the weather be cold.

If the foal is an " early " one (and, in my opinion, the earlier the better) encourage it to eat a little of its mother's boiled food, which it will be able to do a few days after its birth ; so that when it has to be weaned it will take more kindly to artificial food. As a rule it is advisable to let the mare itself wean its own foal. But if this be not done within seven months, the mare should be kept in the stable for a few days, and afterwards in a field—away from the foal. A few days before the foal is to be taken away from the mare to be weaned, the latter's food should consist of dry hay, so as to assist to dry up the flow of milk. A little work will also facilitate this.

If possible, foals should be " handled " almost from the day they are born, and for this purpose subsequently a small halter should be put upon them to enable them to be held and walked about. Throughout their first winter (in cold climates) foals should be stabled at night. Or, at all events, there should be a large (but not draughty) shed handy for them to run in and out of. They should have the same food as that supplied to the mares.

The Service of Mares, etc.—When the mare is in good health, and " in heat," have her covered on the *ninth* day after foaling. In some cases, however, she will not be in heat then, and may also be out of condition, rendering it advisable to postpone the serving. In this event let it be effected on the *twenty-eighth* day after foaling.

After the mare has been " served," allow nineteen to twenty-one days to elapse before trying her again, the exact number of days being determined by the period of " heat " at the time of first serving. After this, " try " her twice a week until *you are sure* she is with foal. Never give a mare more

than *one* service at a time, unless there has been trouble to get her in foal on previous occasions, in which case you may have her served every day during the period of heat. The reason for this will be obvious to any intelligent horseman who understands the physiology of the animal's generative organs, and the theory of conception.

In my opinion a mare should not be served before she is three years of age. To attempt breeding from a filly two years of age is undoubtedly *a great mistake*, and false economy.

If the mare be in work at the time of service, put her back to work again afterwards ; if on pasture, put her back to pasture. If, prior to being served, she was idle in the stable or paddock, let her at once go back to the same condition. In short, do not change, any more than necessary, the conditions under which the mare has been kept, the idea being to avoid all excitement. The common system of taking the mare away from home to a strange place and amidst strange surroundings to be served, is by no means so conducive to favourable conception as the plan whereby the stallion makes his regular rounds, the mares being served on the farms where they are kept and worked. This method is better both for the mare and the stallion, as, under it, the former escapes the injurious effects of change and consequent excitement, and the latter obtains, in travelling round from place to place, the exercise which is *absolutely necessary* to keep it in perfect condition, and obtain the best results from its "serving." In fact, there is no doubt that lack of sufficient exercise is very largely responsible for the amount of *vice* that is so frequently met with in stallions, and also, in a lesser degree, for lack of stamina and prematurely diminished sexual vigour.

STABLES

MY remarks under this heading will be practically confined to the subjects of drainage, ventilation, and the formation of the level of floors in stalls and boxes.

To deal with the last-mentioned point first—for some occult reason or other the flooring or paving of the stalls is invariably made to *slope from the head backwards*, the difference in elevation being sometimes as much as three inches. This is a great mistake. It compels the animal to stand in any position in the stall except the one which is admittedly the natural and correct one. Its quarters will frequently project beyond the stall-end as far back as its halter-shank will permit. At other times it will be found standing diagonally across the centre of the stall, indicating as plainly as possible that the backward sloping stall is not to its liking. Observe the horse in its natural state, standing and resting in a field—say on the lee side of a tree. It will invariably be noticed (if there be any declivity) that its fore feet will be on the lower ground, showing that it prefers to *face* the declivity. Never, under any circumstances, do you see a horse, when resting, face the hill. Whatever may be the reason for this peculiarity on the part of the animal, the fact remains that it has a rooted objection to being placed in a position which keeps its hind feet on a lower elevation than its fore feet, and this should be taken into account in the construction of the floors of the stalls.

The drains of the stall should be so constructed that they can be readily swept out or flushed. They should be placed in the centre of the stall, about half an inch below the edge of the paving. Each side of the stall should have a fall of about half an inch towards the drain. All drains should have perforated and movable covers. The drain itself, *not* the paving, should have the necessary fall towards the main drain. Loose boxes also should be constructed in the above manner, both as regards paving and drains.

All stalls should be roomy, at least six feet in width. In cold climates some method of artificial heating is necessary, whilst in hot climates this need

never be resorted to—in fact, an open shed frequently meets all requirements. Perhaps the most important factor in the economy of a stable is efficient ventilation. How to secure this, without exposing the animals to draughts, is a problem requiring very careful consideration, as there can be no doubt that defective or insufficient ventilation is one of the principal causes both of the development and communication of disease.

The wall above the manger should not be faced with white, glazed tiles, the glare from them being injurious to the sight of the animal. Dark green tiles are the best.

Overhead racks should be avoided. They place the food in a position which is quite unnatural, and, moreover, they allow hay-seeds to get into the horses' eyes when it is in the act of pulling out the hay.

Enamelled mangers are the best. They should be so constructed as to hold water at one end, hay in the centre, and the solid food at the other end. The hay section should have bars sufficiently close together to prevent the horse from pulling out the hay *en masse*, and so wasting it underfoot, and at the same time wide enough apart to enable the animal to get its nose freely between them. All mangers should be furnished with a lid, which should be dropped when the animal is put on the pillar-reins, and while it is being groomed. It is best to have sliding doors fitted to the stables, but if they are hinged they should be hung so as to open outwards. In all large stables a "sick box" will be found useful. When not in use for invalids, it can be utilized for grooming, washing, etc.

FEEDING AND STABLE MANAGEMENT, ETC.

NO hard and fast rule can be laid down for the above. Both feeding and stable management generally must be regulated to a large extent by the climatic conditions and the nature of the immediate surroundings. Some information of a general character may, however, be given and prove of service.

FEEDING.—The horse has, compared with, say, the ox, a very small stomach, necessitating frequent feeding, but in very small quantities at a time. The processes of digestion and assimilation are commenced in the stomach and completed in the intestines, so that the stomach, although of small capacity, is almost always ready to receive a further small supply of food. A dog fed once a day only would thrive, providing of course that it was allowed to eat as much as it desired; but a horse so fed would certainly collapse and die of starvation. I have purposely watched horses grazing under natural conditions on fairly grassed Australian pasturage, and have become convinced, as a result of my observation, that they feed continuously for at least twenty hours out of the twenty-four. It is important that these facts should be borne in mind by all who have anything to do with the feeding of horses.

Almost any kind of *grain* will nourish a horse, but in my opinion *oats* are the best for horses intended for quick work. The oats should be mixed occasionally with a small quantity of old beans, well crushed and cleaned. Crushed barley and maize are also good foods. I especially recommend cracked maize for draught, coach and bus and light harness horses generally, but it must always be freshly broken, and consequently free from weevils and mildew. Maize mixed with other grain, and a certain proportion of bran and chaff, is also good. I am a firm believer in *crushed*, as against whole grain, always provided it be fresh, free from dirt, foreign substances of any description, and mildew.

For general purposes (in Australia) I have found the following mixture of grain, chaff and bran suitable, and adequate to meet all requirements: A certain quantity of chaff, an equal *weight* of any suitable kind of grain, and such a proportion of bran as to allow each horse about 1½ lb. (of bran) per day. Of this mixture each animal would be allowed three to four buckets per day, each bucket containing 9 lb. of food. On this diet I have satisfactorily superintended the feeding of as many as 1,500 coaching horses at a time in districts far apart and under different climatic conditions, which necessitated the use of different kinds of grain food, some of which were not the most suitable for the purpose. However, I managed to keep the animals in good condition and capable, when required, of doing two days' work in one. The above mixture should give satisfactory results anywhere, although it must be mentioned that the chaff I used was Australian, which, consisting as it does of growing oats cut green and hayed in the usual manner, is more nutritive than English chaff, which is made of meadow and clover hay. It is generally admitted that grass and the cereals grown in hot and dry climates are superior in nutritive value to those grown in the British Isles; and this is one of the reasons why some parts of Australia constitute an ideal ground for horse-breeding. Well-bred Australian horses cannot be excelled for speed and endurance, and when the truth of this is fully recognized the demand for them will not be confined to hacks and remounts, but will extend to thoroughbred stock as well. Stock bred in Australia from the best English blood is greatly improved by the climate and natural grasses of that country.

Carrots should be freely used in every stable. They are beneficial for the skin and coat, and are also useful in the case of thick-winded horses. In the seasons when horses cannot be grazed, green food should be allowed in the stable; but it must be given fresh and not in large quantities. A little green food, chopped with carrots and mixed with the food usually given to a bad feeder, will have a beneficial effect. I have also found cocoa-nut cake an excellent substitute for bran. Sometimes a little sugar or molasses administered in the same manner will tempt a sickly horse to eat. As stated elsewhere, a supply of *rock-salt* should always be kept in the manger; otherwise the animal may learn to crib-bite, wind-suck, and gnaw the wood fixtures of the stable. Salt is fully as essential to the health and well-being of the horse as it is to ourselves. The animal will lick and eat the very earth to obtain it.

Before leaving the question of feeding, I should just like to say that in large establishments the mixing of the food should always be done under the special supervision of an expert. It will pay, as the matter is one of very great importance to the well-being of the animals. I should also have mentioned that in cases where whole oats are used, a double handful of *clean chaff* should invariably be mixed with them. This admixture compels the horse to masticate its food more thoroughly and eat more slowly than it would probably do otherwise. The truth of this can be tested by an examination of the droppings from any quick-feeding horse.

Watering.—This must also be regulated to some extent by the nature of the climate, the constitution of the animal, and the kind of work it has to perform. Generally speaking, the best plan is to give water *ad lib.* the first thing in the morning—soft water if possible, and preferably out of a trough; but never let it be icy cold. Then groom and feed. When on a journey, either in winter or summer, give the animal an occasional drink on the road, say from four to eight swallows, but never let it become ravenously thirsty. About a mile or so from the end of the journey give it a long drink, and drive it steadily afterwards; the last hundred yards or so should be taken at a very quiet jog or walk, and the horse will then be nearly dry, more easily groomed, and quite fit for feeding.

Grooming.—Efficient grooming is almost as essential to the well-being of the horse as regular feeding and watering. It involves hard work if done thoroughly, although some horses, having less sensitive skins than others, will stand quieter under the operation and are consequently easier to groom. Grooms frequently lose their temper and patience when working on an exceptionally sensitive horse, and out of pure malice use the curry-comb and body-brush in an outrageously rough and stupid manner. The curry-comb should always be used most gently and neatly; its sole legitimate object is to loosen the hair which has become matted with sweat and dirt, and to remove the splashes of mud, thus preparing the way for the body-brush, which it also serves to keep clean. Nothing, however, will really groom and clean a horse thoroughly but a liberal use of "elbow grease," patiently and judiciously applied. There is no objection to the use of warm water on the legs and bellies of horses after hunting, provided the bathing be done in a suitable place, free from draughts, and the animal be rubbed thoroughly dry afterwards.

THE MANAGEMENT AND FEEDING OF STALLIONS KEPT SOLELY FOR SERVICE PURPOSES

WITH regard to this matter, so much depends upon the particular constitution of the horse, the nature of the country and the climate, and other attendant circumstances, that it is not possible to lay down any hard and fast code of regulations for universal application. A few suggestions, however, may be of use generally, and particularly to the large and increasing number of those who, without the advantage of the necessary previous equine experience, gravitate to the Colonies to embark in farming and general agricultural pursuits.

THE REARING OF YOUNG STALLIONS.—Keep them on good pasture during the whole of the first summer, but, if required, give them a small feed of crushed oats or maize and good chaff, along with a little bran occasionally. When they are in the stable feed them from a lower manger than the ordinary one, and have bars fixed transversely across it, to prevent the colt from acquiring the habit of "nosing" its food out of it. Let there be always a plentiful supply of rock-salt in the manger.

Halter the foal and handle it from time to time, to keep it gentle, but never *play* with it. Pick up its legs and examine the feet every now and again and, if necessary, run a rasp round the outside edge. But never put a knife on the sole or frog.

Root food may be given in reasonable quantities, but it is a mistake to give it in excess, as is frequently done. Carrots are by far the best.

In winter, when the weather is really cold, take the colt in at night, continuing to let it out daily, if moderately fine, until the summer sets in again, when it can be left out altogether. Do not omit to "handle" it from time to time. In fact, I recommend that the colt should be trained to carry the surcingle and crupper, and led occasionally on the road. It will thus become gradually accustomed to the noises of passing carts, etc., and the

sight of other animals, at an age when such training is much more easily acquired than at a subsequent stage in the animal's career.

When the stallion is turned two years old, let it commence to cover, having during the preceding month or six weeks given it with its food a few old and well-crushed beans, and occasionally a few white peas, slightly soaked and mixed with the oats ; also a few carrots daily. It is understood that we are now dealing with the rearing of a stallion which is intended to do the utmost possible work in the stud. When commencing to cover, I should let it serve, say, once a week for six weeks, then twice a week for the next four weeks, thus gradually developing the sexual organs along with the other functions. The animal itself will thereby be benefited, and at the same time the covering fees will materially lessen the cost of its maintenance.

When the stallion has reached the age of three years the number of servings may be gradually increased from twice a week to once every day—the increase to be graduated over a period of about six weeks. At four years of age it may be put on " full service," but it must be borne in mind that no stallion should be allowed to serve more than two mares in a day. A mature and vigorous horse, properly fed and exercised, will be able to maintain full service for ten or twelve weeks without sustaining any injury ; and an animal of exceptional vigour and virility will be capable of even more than this. It is to be noted that in high altitudes horses cannot perform as much service as in lower ones. This opinion is held by so many eminent authorities that it may be accepted as an established fact.

I am strongly of opinion that the failures of many stud-farms are attributable solely to the owners' misconceptions with regard to the real nature and physical requirements of the animal they are breeding. They confine brood mares separately in loose boxes, overlooking the fact that the animal is extremely gregarious by nature ; and—a more serious mistake still—they do not allow them half the amount of exercise which is absolutely indispensable. As I have pointed out elsewhere, the horse's stomach capacity is relatively very small, and it must be almost continually feeding to obtain the necessary sustenance to keep it in perfect condition ; and this continuous feeding is effected (under natural conditions) while the animal is moving about, which it will do for at least twenty hours out of the twenty-four. It follows, therefore, that abundant exercise is one of the horse's most essential requirements. If a stallion is not in the habit of travelling for stud purposes it should be led,

for the sake of the exercise, for a distance of at least six miles, twice every day. In Australia the covering fees generally include the paddocking of the mares for three months, and the stallion is allowed to run with them ; so that the animals are bred there quite naturally, to the great and permanent benefit of their constitutions. A further advantage of this system is that it affords no opportunity for the acquiring of stable tricks and vices, as in the case of the artificial confinement system I am now condemning.

Physic, Condiments and Stimulants.—The ordinary ailments of the horse are generally traceable to one or more of the three following causes, namely (1) carelessness in dieting ; (2) an inadequate supply of salt ; and (3) insufficient exercise. If these points be attended to carefully, nothing more will, as a rule, be necessary to restore the animal to health. I do not believe in wholesale and indiscriminate physicking, nor even in the administration of condiments and stimulants in cases of slight, temporary indisposition, but I again emphasize the great importance of keeping a constant supply of rock-salt in the mangers. Carrots, or other root food, should also be given.

Management.—Never play with the stallion, or teach it to bite everything it comes across (as is sometimes done), or one day it may take a fancy to bite you. Nip all tricks in the bud. When it is between one and two years old, train it with long-reins in the ring to turn to the rein and to back well, and then teach it to do so to the voice alone. Your aim should be to make it just as obedient as an ordinary saddle or harness horse, and by proper training this can be easily accomplished. In fact, all stallions can, and should be, broken to saddle or harness. They will then be much more easily exercised, and, moreover, much more likely to *get* the requisite amount of exercise.

Train the stallion to stand well, but not (as is frequently the case) with the legs too far extended. This habit has the effect of making its height appear to be less than it really is, and is, in my opinion, generally detrimental to its appearance. For show purposes you should always use a very long rein, to enable you to give the horse a run of at least twenty feet. Always stop it quietly, as far as possible with the voice alone, and, when turning, make it wheel in a large circle round you, using the full length of the leading-rein, and running on again directly the stallion is square with yourself.

Strange as it may appear to the novice, stallions are naturally extremely sensitive, and quick to conceive likes and dislikes. Great kindness and gentleness should therefore characterize their training and management. I

am now driving in an American buggy a stallion whose previous owner desired to work it in harness. Not having had any previous training in this respect it refused to start, so the owner *flogged* it. In less time than it takes to relate the occurrence, the horse was on one side of a ditch, and the cart—with the driver in it—in the *bottom* of the ditch. This was the result of attempting to force the animal by violence to do something it had never been trained to do. As a result of gentle treatment and proper training the stallion in question is now as quiet as possible, in stable, side-saddle, or harness, with or without winkers.

SHOEING, ETC.

THIS is a most important question, and one which has perhaps excited more controversy than any other matter affecting the welfare of the horse. In Australia, more especially, there is infinite difference of opinion respecting the best method of effecting the operation; masters and men disagree, fellow-smiths in the same forge disagree; every smith lays the flattering unction to his soul, and does not hesitate to express his opinion at every possible opportunity, that "he can shoe a horse better than any other smith." But, in spite of all this, horses are lamed and crippled daily by the bad shoeing of ignorant smiths. This occurs in the colonies generally; but I have also had considerable experience of British smiths, and I must admit that I find very little difference. The chief point in favour of the Britishers is that, as a rule, they *will* do as they are told, however much their instructions may be opposed to their own preconceived ideas. The Australian smith will *not*. He will do as he thinks best, and tells you so; and as it is not the general custom to carry a forge in one's saddle valise, there is nothing to do but to submit with as good a grace as possible externally and maledictions within. The only instance, in my own personal experience, of a British smith refusing to carry out his instructions with regard to shoeing occurred when I was travelling in Scotland, during my lecturing and exhibition tour in that country. This specimen of the "village blacksmith," with all the dogged obstinacy which is, doubtless erroneously and maliciously, alleged to be one of the most prominent characteristics of his nation, absolutely refused to stultify his conscience by performing the operation in accordance with my ideas. The result was that my beautiful little mare, "Butterfly," that had never been lame in her life, could not put her foot to the ground, and I had to crawl along to the town in which I was to lecture at the rate of about four miles an hour. The only consolation I had was the reflection that I had not parted from my Scottish friend without a vigorous and graphic expression of my opinion regarding him.

Doubtless, in the mind of every thoughtful horseman, and also probably

in the minds of others who are not horsemen, the question has at some time or other arisen : Is there any necessity for a horse to be shod at all, and what are the benefits derived from the shoeing ? My answer to the first question is that, in a natural state, horses should be unshod, but, when civilized, shoes are, under most circumstances, a necessity. The following explanation will enable any one to understand why it should be so. The strongest part of the animal's foot is the wall that surrounds it, which has a natural growth, corresponding to the growth of our own nails. This wall is adequate in itself to withstand the ordinary wear and tear of a *natural* life ; but it is *not* sufficient when the horse is compelled to work for a number of hours a day on artificially-constructed roads. To take the case of the *draught-horse*, engaged all day in the pulling of heavily-laden carts or waggons. The animal naturally *pulls* from its *toes*, and if the walls of the foot were not artificially strengthened and protected they would, under such rough usage, rapidly be crushed and split to pieces. Hence, for them, shoes are an absolutely necessity.

For *farm horses*, which are constantly working in the fields, shoes are not always required. All that is necessary is to run the rasp along the outside edge of the " wall " occasionally. If the farmer will try this on sound-footed horses, he will acknowledge that I am right. As regards the shoeing of *foals*, nothing can be more absurd. When I came to England I frequently saw them shod, not merely for show purposes, but when grazing also. It is simply ridiculous. Under no circumstances whatever should a foal be shod, except in the case of a veterinary surgeon ordering it to be done for the purpose of treating some local complaint.

The Best Methods of Shoeing.—These must be regulated by circumstances, and particularly by the nature and amount of work the animal is called upon to perform. But before discussing them it may be useful to briefly describe the natural construction and functions of the different portions of the foot. The fore and hind feet are similarly constructed. The bones entering immediately into what is termed the foot (as being enclosed within the hoof) are the coffin and navicular bones. In articulation with these, and partly within the hoof, is the little pastern, or coronary bone. The hoof is a hard, horny substance that encloses the foot and, so to speak, binds its component parts together. It has to sustain the whole weight of the horse. At the bottom of the wall of the hoof is a concave sole, which is also of a horny nature and non-sensitive. But immediately above this is

the *sensitive* sole. In the horny sole is situated the "frog," which divides the two heels and runs to a point towards the toe. Inside of this, again, is the *sensitive* frog.

In the fore foot, the thickest and strongest portion of horn is placed in *front*. In the hind feet the horn in the sides, or lateral walls of the crust, called the quarters, is by far the strongest. The fore shoes, therefore, should be principally fastened in *front*, and the hind ones at the sides, but not too near the heels, so as to prevent the slight expansion which does take place when the foot is brought in contact with the ground. This is *conclusively proved* by the inside of the hind heels of the shoes always showing a bright surface, where the friction caused by this action has taken place.

The inner side of the hoof is the weakest, and slightly the highest, part of it. This peculiarity of the natural formation is sometimes ignored by smiths. They frequently make the outer heel highest, thus reversing the natural line of pressure, producing an undue bearing on the weaker part, and thereby giving rise to splints, curbs, spavins, contractions, and navicular diseases. In fact, I am so strongly impressed with a sense of the seriousness and the amount of mischief often inflicted upon the horse by the ignorance of shoeing-smiths, that I would, if I had the power, compel every one of them to pass a suitable examination before permitting them to practise. (I find that many smiths are now certificated in England.)

We have now to deal with the question as to which are the *best methods of shoeing*, and will commence with the *draught-horse*. This animal's feet are being more or less constantly brought into violent contact with a hard, strong ground, and are frequently slipping, and the horse has often to use all its strength in pulling a heavy load up-hill. Very strong shoes are therefore required, or they will readily bend or break. I recommend the putting on of a steel cross toe-piece, and one calking on each outer heel exactly the same height as the toe-piece, and the inside heels thickened so as to bring a level bearing of the foot on the shoe. I would also use *two* toe-clips instead of one, as is customary. It must be borne in mind that the force used by a heavily-laden draught-horse, when stamping its feet down, is immense. The use of two toe-clips divides the pressure on the wall, and they are not nearly so likely to break off as when one only is used. As it is advisable to concentrate as much strength as possible into the walls of the hoof, I would

not allow the wall to be weakened by thinning, which is frequently done so that the clip may be buried in it and a neat job made.

In the case of a draught-horse which has brittle feet, a rim of thick sole leather inserted between the shoe and the wall of the hoof will greatly relieve the jarring and preserve the foot, and also assist in retaining the shoe in proper position.

Preparing the Horse's Foot for Shoeing.—I strongly condemn the use of the knife on the sole or frog of a healthy foot, for the following reasons. It is necessary that the sole of the foot should be strong enough to prevent any loose stone from bruising it and causing lameness. Then why weaken it by paring it away till so thin that the smith can easily bend it in with a slight pressure of his thumb ? And some, when they can do this without having actually brought blood, congratulate themselves upon their skill and cleverness. To quote an instance of the result of this extreme paring : I was engaged some years ago in Yorkshire, and was driving a fine chestnut horse, with grand action and style (I afterwards sold him for £85). I would never permit the knife on the soles or frogs of his feet, so of course they looked rough. My groom neglected to tell the smith this when I sent the animal to be shod. I had to drive over the moors to St. John's Chapel that day, and all the stones the horse came across he crept over like a cat on hot bricks. Before long he went quite lame and scarcely dared to lift his feet off the ground. I alighted and examined his feet. The soles had been pared quite thin, and bruises were showing, caused by the rough metal. The frog was cut clean away. Similar treatment was the cause of " Butterfly's " lameness, referred to a few pages back.

A smith can, with a sharp knife, pare away in a few seconds more frog and sole than will grow in six months. It is almost worse in my opinion to cut and mutilate the frog than the sole, as shod or unshod the frog should touch the ground. The natural crust or shoe will prevent too much pressure being put upon the frog. Any superfluity of sole will be shed by a natural process. The jar of the foot coming into contact with the ground is sufficient to bring the pieces away. The sole is not constructed to come in heavy and continuous contact with the ground, because it is naturally concave. The frog is always, in an unshod healthy foot, level with the crust.

Opening of the heels should never be permitted. The use of the knife on this particular portion of the horse's foot promotes contraction, and weakens

what is already the weakest portion of the wall of the foot. The bars are generally most abused and weakened by the knife. The smith, thinking these parts useless, cuts them out, and so the foot loses one of its principal supports.

Corns.—I think this name in connexion with horses is a misnomer. The abnormality is not a corn as we understand the word, but simply a bruise, arising from two causes, viz., first, the keeping on of the shoe too long. As the foot is constantly growing, whereas the shoe is, of course, not doing so, the latter gradually works itself off the wall of the foot on to the horny sole and embeds itself in it, eventually coming into contact with the sensitive sole and causing a bruise. The blood becomes congested, and lameness results. The second cause of the so-called corns is the too tight shoeing at the heels in the first place.

The cure is to take off the shoe, cut down to the corn (taking care not to wound the sensitive sole underneath) and apply longer and wider shoes. The crust adjacent to the excision should be slightly cut away, so as to prevent that portion from pressing upon the shoe and so causing lameness.

Calkings.—In my opinion all light harness horses are better without these. By concentrating too much weight upon the toe they throw the foot out of its natural position. Moreover, if the calkings are intended to prevent slipping, their utility in this respect only lasts a very short time, as they rapidly wear down and become smooth. A *flat* shoe is really the best. It enables the frog to perform its work to some extent by allowing it to come in contact with the ground, and thus prevents the horse from slipping. The object in shoeing should be to make the shoe fit the foot, not *vice versa*. The latter plan is frequently adopted, the feet being pinched up with tight heels, and the walls weakened with the rasp, under the mistaken and foolish idea that a set of "neat-looking" feet is absolutely essential.

Retaining the Shoes on Too Long.—Much harm results from this very common practice. From three weeks to a month is quite long enough to go without changing the shoes. A farmer (congratulating himself) once informed me that "*his* horses had had their shoes on for *five months*." Under such circumstances is it to be wondered at that the animal's feet become crippled? Towards the autumn, when farm horses have either very light work to do, or none at all, their shoes should be taken off, in order to enable

them to derive as much benefit and comfort as possible during their prolonged and enforced rest.

General Care of the Feet.—The feet are, or always should be, an object of particular attention with every horseman. I have always made it a standing rule, with my own horses, that the walls and soles of each foot shall be washed clean before the animal is stabled. This prevents the overlooking of any stone or nail which may have been lodged in the foot—a thing which may easily occur any day. Every morning the feet should be carefully examined with a pick ; the clenches of the nails inspected and broken nails sought for. The position of the shoe should be observed, to see if it has moved in any way from its proper place, and the condition of the shoes generally should be carefully inspected.

For *riding-horses* the shoes should be much lighter. No absolute rule can be formulated respecting the weight and size, as some horses wear out their shoes much more quickly than others, and allowance must be made for this. The guiding principle should be to make the shoes sufficiently thick and heavy to last approximately a month. The width of the shoe should be equal to that of the wall, and it should have a flat surface bearing in all cases. The lower surface should be concave. This gives the animal a better grip of the ground, and tends to prevent slipping. For light horses with sound feet, five nails will be found sufficient for the fore feet—viz. three on the outside and two on the inside ; for the hind feet, three on each side. The clenches should never be rasped after clenching, as they become much weakened thereby and will readily break off. The nail-heads should not protrude beyond the level of the shoe, or only to a very slight extent, to enable the smith when shoeing to get some little pressure for his pincers. Grooves in shoes necessarily weaken them and, in my opinion, are quite useless for preventing slipping. Countersunk holes are the best. The nails, being thereby better protected through the heads fitting more accurately, are less liable to be accidentally torn out. Should a shoe become displaced when out riding, the best course is to unclench the nails and take off the shoe, unless the displacement should be very slight, in which case a few taps with a stone may temporarily restore it to its proper position. In the latter case, however, a careful inspection should be made frequently during the journey, to guard against a further displacement causing injury by allowing the shoe to strike against the other leg.

CASTRATION

THIS operation is usually performed as a matter of course on all young male stock intended for domestic service, and frequently on aged animals for a variety of reasons.

The Proper Season for Castration.—This varies to some extent in different countries for climatic reasons. The operation should not be performed in extremely hot weather, if it can be avoided, as in such cases there is always a certain amount of danger of blood-poisoning being set up by flies. Generally speaking, the early spring is the best time, and after that, the early autumn.

Preparations for the Operation.—If the colt has been stabled for any length of time, laxative diet should be given during the two preceding days, and no food whatever should be allowed during the three or four hours immediately before the operation.

Precautions.—See that there is no rupture of the bowel in the scrotum, and that both the testicles are down. Cleanse your knife and instruments with some reliable disinfectant, and wash your own hands well in a similar solution. The disinfecting liquid should be contained in a bucket, as it must also be used for cleansing the parts of the colt. This is a *most essential* and important part of the proceedings, and it cannot be performed too thoroughly. Any carelessness in this respect may easily give rise to serious complications, such as swellings and blood-poisoning, all of which may be avoided by reasonable care and attention. First pull forward the penis, and thoroughly wash both it and its sheath with the disinfectant and soap, subsequently rinsing with the former alone. All the surrounding parts as far as the anus and the inside of the tail, etc., must also be thoroughly cleansed, and then dried with a soft rubber. These "precautions" should be executed immediately the colt is down and secured.

Securing the Colt when Thrown.—When the operator has sufficient assistance at his disposal, I think the method illustrated on Plate 41 is as good as any for the purpose of the operation. When the animal is down and

secured (see Plate 40) place an ordinary corn-sack, stuffed with hay or grass, on each side of it, to keep it steady and prevent it from rolling to either side. This precaution does not take up any appreciable amount of time, and it places the animal completely at the service of the operator, who would otherwise have to rely upon his assistants to keep the subject steady during the operation.

How to Perform the Operation.—There are various ways, such as by tortion, twisting and tearing, scraping, by the "ecraseur," by firing or actual cautery, and, lastly, by a combined process of cutting and crushing. The last two methods being, in my opinion, the best, it is with them only that I propose dealing.

Firing, or Actual Cautery.—Two instruments are required for this process, namely, a pair of clams and an ordinary firing-iron. Of the various kinds of clams in use for this purpose, I prefer those made of metal, with serrated edges.

First take hold of one of the testicles tightly with the right hand—I usually commence with the testicle on my right—and pull it upwards, grasp the scrotum immediately below the testicle with the left hand, in order to distend well the part of the scrotum containing the testicle, then, with the knife in the right hand, make a free incision along the centre of the testicle, exposing it. Draw it out as far as necessary with the left hand, apply the claws of the clam, secure the latter, then release the testicle. The clams are generally secured mechanically, the operator having simply to see that the serrated jaws are tight in position and securely fixed. The testicle must now be amputated just above the clams, either with the knife or the sharp edge of the hot iron, and the flat portion of the iron must then be applied to the ends of the parts, to thoroughly sear them. The iron must be *very hot*, or otherwise the scab formed at the end of the ruptured blood-vessel may be torn away when the instrument is removed.

When the operation is finished the clams should be opened carefully, to allow the cord to retract slowly. Some operators apply pulverized resin to the ends of the mass of cords, previous to the cauterization, but the introduction of a foreign substance into the wound frequently sets up suppuration, and I strongly disapprove of the practice.

Cutting and Crushing.—This method is, in my opinion, far in advance of all others. I have used it for the castration of as many animals at one

time as 300 mules of all ages, without a single death or mishap of any description. It can only be performed with the aid of an instrument specially constructed for the purpose, and for this reason I do not think it necessary to enter into any detailed description of the process. It is seldom followed by any haemorrhage or swelling, always provided that the parts be thoroughly cleansed as described above, and that all the instruments be absolutely and chemically clean. It is wise to *keep* the instruments during use in a weak solution of some dip or disinfectant.

HINTS ON THE PREVENTION OF DISEASE AND INJURIES

WHEN first stabling a horse brought in from the paddock, do not confine it in a *close* stable, or it will probably contract cold and strangles. When it is in the stable, keep it as "hardy" as possible. Never make use of the chest-piece, which generally constitutes one of the items in a full set of clothing. The use of it is part and parcel of the reprehensible system of "coddling," which simply predisposes the animal to take cold every time it is exposed in the open to a piercing wind.

Avoid all sudden changes of diet, such as from soft, natural food to corn and hay, and *vice versa*.

When about to turn the animal out to graze, harden it off by degrees; commencing by not cleaning or rugging it, and slightly cover the vital parts with grease (which is free from salt) when turning out if the weather is cold or wet.

If resting it in the paddock, even for as short a period as a week, it is well to take off the shoes.

If it is a shy feeder, give the food in small quantities, and change it frequently. Always keep the manger scrupulously clean, and see that the feeding-manger is never without a few pieces of rock-salt.

Wooden stables should be well limewashed, and the lime should be mixed with fat, glue or size, to prevent it from being easily rubbed off.

Hay should be put in a barred manger, not in racks overhead. Under the latter plan the horse's head is never clean, and hayseeds and dust are liable to get into its eyes.

There should always be bedding down, but it need not be so thick in the daytime as at night. Bedding which is saturated with, and strongly odoriferous of, ammonia, conduces to the development of thrush and lung complaints.

Hints on the Prevention of Disease and Injuries

The stable should be so constructed as to admit as much light as possible. Dark stables have a prejudicial effect upon the sight of the animal. They should always be kept warm (not hot), and well ventilated, without draughts.

When the horse's legs are washed, dry them thoroughly and hand-rub them afterwards. Do not pare the soles or frogs.

Shoe the horse every three or four weeks. If new shoes are not required, have "removes." These will save "broken" knees and contracted feet.

Use *flat* shoes concaved for ordinary driving or riding, except in slippery weather, when heel and toe spikes, and projecting nails, are compulsory.

Never start a horse upon a long journey with its stomach full. Should it ever be absolutely necessary to do so, drive or ride the animal as slowly as possible for the first few miles.

When driving or riding, water your horse when within a mile or so from home—on the return journey. This will sometimes prevent a possible attack of colic.

After a very fast drive or ride home, a good straw whisking—preferably "double-handed"—without too much punching or "cissing," is beneficial, and will prevent chill and fever. Rub the ears until they are dry and warm. Give chilled water. If the animal should break into a sweat, walk it briskly up and down the yard, and give it another whisking and a little stimulant.

Always wash the horse's feet when dressing them, and examine for nails, loose shoes, etc.

Exercise care when leading a horse through a low doorway, as a blow on the top of the head will frequently produce "poll-evil." Take hold of its head and walk backwards, and see that its hips do not strike the door-posts.

Large establishments should have a stable specially reserved for the horses of visitors, to avoid the risk of contagion. Also a "nursing" box with a stretcher and other accessories of a suitable nature.

ADVICE TO THE EQUINE NURSE

THE proper care of sick animals demands considerable knowledge and intelligence, a large amount of patience, and the most constant and assiduous attention, on the part of those who undertake it. The duties are frequently so irksome and tedious that the most conscientious "nurse" often relaxes his attentions prematurely; in fact, the conditions under which the nursing has to be effected are in many cases so unfavourable that it is practically impossible for even the most capable to do all that ought to be done, however strong may be the desire to do it.

The first absolute *sine quâ non* is perfect ventilation, unaccompanied by any direct draught upon the body of the patient. Fresh air revivifies the blood, and is the most important factor in suppressing the germs of disease. A current of pure air should be admitted low down in the building, and the upper outlets for ventilation should be as near the roof or ceiling as possible.

Wherever possible a particular box should be reserved as a hospital, and it should be thoroughly swept, scrubbed with hot water where necessary, and disinfected. The manger should first be scraped and washed, and then limewashed. Buckets and all other stable utensils should be cleaned and disinfected.

Dieting is a very important point, of course, and one that demands considerable knowledge and discretion on the part of the attendant. A laxative diet is usually necessary, as the animal will in most cases have a certain amount of fever. It will be found to be more efficacious than drugs, and its effects more permanent. The natural foods are—fresh grass, carrots, mangolds, swedes, fresh lucerne, green oats, maize, barley, and wheat. Boiled foods (which should never be given very hot) should be regarded as an "invalid" diet only. The best are boiled linseed, mixed with either steeped crushed oats, boiled barley, bran mash or gruel. In all prepared

foods salt should be used, and there should always be a good supply of rock-salt in the manger.

Foods should be administered frequently, but in very small quantities. If practicable, green food should be offered by the hand, and the patient should be encouraged, by caresses, to eat. If the animal displays any predilection for a particular food, it should be gratified. In the convalescent stage specially nourishing foods are necessary. They must not be bulky or difficult of assimilation, or they will further overtax the already weakened digestive organs. Among the most suitable of such foods are : milk, eggs, wine, stout, and treacle or molasses mixed with a small quantity of chaff and crushed oats which have been first steeped in hot water. In my opinion there is nothing to equal eggs and wine, or eggs, milk and wine, administered as a drench by means of a bottle.

Water should never be given cold or even lukewarm, but at a temperature of about 80° F. The utensil containing it must be scrupulously clean, and free from any unpleasant odour or grease. The water should be offered frequently, and if necessary left for a few minutes before the animal. The bucket should then be removed, emptied and cleansed.

The eyes, nostrils and mouth, and the lower and other parts of the animal which are covered by thin, hairless skin, should be very carefully and gently sponged from time to time, but the patient should not be irritated by grooming, particularly in feverish cases. A careful and rapid brush over the body, followed, with a soft rubber, before the clothing is replaced, will do no harm, and a slow walk in the sun will often be found beneficial. The latter should be done whilst the box is being cleaned out and aired. Too much air cannot be given, provided the animal be kept warm, and have its legs bandaged. Of course, in hot climates much greater freedom can advantageously be allowed to the patient, as the nights are only pleasantly cold, whilst the days are warm and sunny. Nature will thus be enabled to make a fuller use of her great restorative powers than is practicable in less favoured countries.

DISEASES AND AILMENTS OF THE HORSE

AS the principal object with which this book is written is to make it a useful work of reference for the general horseman, I shall make this section as clear and understandable to the ordinary reader as I possibly can, by the avoidance of technical phraseology and the use of the simplest possible language. In order to establish my claim to speak with some authority on this particular subject, I may mention that I had nearly thirty years' practice as a veterinary surgeon in the Colonies, where my equine and canine surgery held a high reputation for the completeness of its equipment. I have lectured and practically demonstrated my system at various veterinary colleges of Great Britain, and at the University of Edinburgh. All my life I have been an earnest student of everything appertaining to the welfare of the horse, and have never neglected an opportunity of increasing my stock of information. Many years of constant and intimate association with the animal, combined with the theoretical knowledge to be acquired in the schools, are necessary before a man can justly claim to speak with judgment and authority on the subject.

In my opinion all horsemen, more especially in the Colonies, where expert advice and assistance are not so readily attainable as they are in England, should have some knowledge of drugs and their administration, and of the methods of performing simple operations.

BALLING (see Plate 61, Diagram 66).—This can be done either with or without a balling-iron (see Plate 60, Diagrams 62 and 63). The iron illustrated in Diagram 62 is very convenient and safe to use, and can be made by any blacksmith. The ring should be made large enough to enable the operator to pass his hand through with ease, as the ball must be delivered

quickly. I strongly advise the use of a glove for this operation (a leather one with the fingers cut off), whether an iron be used or not, although I am aware that some surgeons are opposed to the practice. It is almost impossible to avoid cutting the knuckles against the molars in horses whose jaws are narrow unless a glove be worn, and in such cases there is always the possibility that blood-poisoning may supervene. The glove should always be washed after the operation, rinsed inside and out, and vaselined thoroughly to keep it soft and pliable.

In the operation of balling the hand of the operator should be narrowed and elongated as much as possible, the ball being held between the fingers as shown in Plate 61, Diagram 65. Take out and hold the tongue with the left hand, and, if not using an iron, turn it point upwards in the mouth, pressing your thumb-nail hard against the palate. If using the iron, just pull the tongue forward to the "near" side with the left hand and, with a quick straight thrust at the right moment, drop the ball behind the root of the tongue, which should be simultaneously released by the left hand.

Some horses obstinately refuse to be balled, and in such cases the application of my No. 2 "Humane" Twitch will prove completely effective. I have frequently had to resort to it myself for the purpose, and ample proof of its efficacy will be found in the chapter on "Twitches," in an extract of a letter from a correspondent who had an exceptionally difficult case to deal with.

If the reader wishes to become an expert in balling, he should make a few balls with treacle and meal and practise with them.

Always ball quietly and quickly, and make up your mind to deposit the ball at the root of the tongue at the first attempt. See that the ball goes down the gullet. Always administer it when the animal is thirsty. Have a bucket of chilled water handy, and directly the ball is given let the horse have a drink, holding the bucket rather high up to assist the passage of the ball down the animal's throat. *Examine* the bucket afterwards, to make sure that the ball is not contained in it.

As an instance of the efficacy of my No. 2 Twitch I may mention an incident which occurred some time ago in Sydney. I was asked by telephone if I would undertake to "ball" a certain well-known stallion. The questioner remarked that many had made the attempt, but all had failed. I replied that I would undertake it, and that my fee would be a guinea

if successful—nothing if I failed. I was in the box alone with the horse for five minutes, to allow it to get accustomed to my presence. I then approached it in the ordinary way with a bridle, and commenced to put it on. But while doing so I slipped on my No. 2 Twitch, and dropped the bridle. Securing the twitch I put my left hand into the animal's mouth, seized its tongue, and in a twinkling the ball was down its throat. This horse could use its front feet with almost as much dexterity as a professional French pugilist in the noble sport of "la savate," and the owner deemed it wise to watch the proceedings through a window.

Drenching, like balling, should be done as quietly as possible. The animal's head should be elevated whilst the drink is being given, but not too high, or it will be unable to swallow, and will probably cough and splutter out the drink. The right angle in most cases is from thirty-five to forty degrees. Stand on the near side of the animal with the bottle in your right hand, let your assistant, or with your left hand, hold up its head, and administer a series of small drinks. Do not be hasty—take ten minutes over the operation if necessary—but see that the whole of the medicine is swallowed. The portion which is usually spilt on the ground is obviously useless for the purpose intended.

The best bottle for drenching purposes is the long narrow white wine bottle, and the top half of it should be covered with leather. Such a bottle is absolutely safe, and, being of a graduated shape, the drench runs much more freely from it than from a bottle which has prominent angular shoulders.

Keep the fingers of your left hand in the horse's mouth, and continue tickling or lightly scratching its tongue. This will induce it to swallow.

Pulse.—In order to ascertain the state of the animal's pulse the external maxillary artery is the most convenient for examination. It is located just at the bend of the lower jaw, and can readily be found by passing the fingers of the right hand slowly and lightly down the edge of the near side lower jaw. When found, press upon the artery *very lightly* with the tips of the fingers. If the pulse is normal it beats very steadily and regularly, each beat having the same even feel as to strength, and averaging from thirty-six to forty beats per minute.

In fever the pulse is always accelerated and usually intermittent. In weakness or debility the pulse is both slower and weaker than normal. In

all ailments attended with acute pain, such as colic, inflammation of the bowels, etc., the pulse is much accelerated, the rapidity of the pulsation being increased in proportion as the actual spasms become more severe, and decreasing as they become less acute.

Temperature.—During health the temperature of the horse averages 99° to 100° F. In fever it, of course, rises—possibly as high as 107°. In South Africa I treated cases of tongue-sickness successfully, in which the temperature reached that point, but that or any higher degree must be regarded as extremely critical. In cases of weakness and debility the temperature becomes lower than normal.

The temperature can always be taken per rectum. Most clinical thermometers require a five minutes' insertion. If in any doubt as to the accuracy of the temperature registered, use a second instrument for verification.

Bleeding.—This practice, once so universally in vogue, is now but rarely resorted to by qualified veterinary practitioners, and laymen had better, generally speaking, leave it alone. Should the operation, however, be really considered necessary, it should always be effected before the strength of the animal begins to fail, and the blood should be taken freely and quickly, in order to produce the desired and marked alteration in the pulse as expeditiously as possible. The *modus operandi* (see Plate 62, Diagram 67) is as follows :—

Put a winker-bridle on the horse, and turn the animal round in the stall. Stand on its off side with your fleam in your left hand, and with your right-hand fingers wet the hair just above the jugular vein, which runs up the neck. By pressing with one of your left-hand fingers the rising of the vein will at once indicate its position. Place the fleam lengthways upon it, about four inches down the neck, holding the blade just off the vein. At the same time press on the vein with your left little finger, give the fleam a sharp tap with the blood-stick, and the blood will spout out. Do not remove the finger from the vein until the required quantity of blood is taken ; then do so, and the blood will cease to flow. Pass a pin through the edges of the wound, and round the pin twist a piece of silk, cotton, or hair, making a kind of figure 8 twisted (see Plate 62, Diagram 68). Take care that no hairs are in the wound when you close it up.

Colic, or Gripes.—This complaint is universal. A good and reliable

gripe-drench, and one that can be readily obtained, is the following: Tincture of opium, 2 fluid ounces; spirits of turpentine, 2 fluid ounces; tincture of capsicum, 1 drachm; with from one to one pint and a half of raw linseed oil. As an alternative drench one may give 1 fluid ounce of chlorodyne in a pint of warm water, and, shortly afterwards, a pint and a half of raw linseed oil. The above-mentioned quantities are for a *full-sized* horse in fair condition. Of course *less* quantities should be given for animals of 14.2 and downwards, or those of any size in weak condition.

Flatulent Colic.—This complaint may be distinguished by a drum-like sound produced when the side of the animal is tapped between the hip-bone and the ribs, as that portion of its body becomes distended and hard. The following drench is a good one: Spirits of chloroform, 1 fluid ounce; tincture of opium, 1 fluid ounce; aromatic spirit of ammonia, 1 fluid ounce; tincture of capsicum, 1 drachm. Shake well and add 8 or 10 ounces of chilled water. Repeat this dose if necessary after the lapse of an hour, followed by a dose of raw linseed oil, and then (if necessary) at intervals of not less than two hours.

In all cases of colic it is advisable to allow the horse sufficient freedom to roll moderately, but not violently. Just hold its head with a halter in such a manner as to permit it the necessary amount of liberty, but so that it cannot injure itself.

Diarrhoea.—The animal must be kept quiet and warm, but not so hot as to cause sweating. It must be allowed as much water as it likes, but only in *small quantities* at a time. Mix a little flour with it. The following drench may be administered twice daily: Tincture of opium, 1 fluid ounce; spirit of chloroform, 6 fluid drachms; diluted sulphuric acid, 2 fluid drachms; tannic acid, 4 fluid drachms, adding water to make up half a pint.

For diarrhoea in foals, the following drench may be given twice daily: Tincture of camphor, half a drachm; tannic acid, 2 drachms; tincture of catechu, 4 fluid drachms; liquid extract of bael fruit, 6 fluid drachms. Make the above into 6 fluid ounces by the addition of cold water.

If the above drench cannot be obtained, three to four drachms of chlorodyne in 6 ounces of chilled flour-water, administered twice a day, will probably effect a cure.

As a drink, give nothing but flour-water.

Dysentery, or Scours.—Give flour-water to drink, in moderate quantities only at a time, but do not stint the total quantity. Administer the following drench, allowing the animal to rest for at least three hours afterwards: Alum, 2 drachms; tincture of opium, 1 ounce; powdered ginger, 3 drachms; chilled flour-water, 1 pint. Or, mix 1 drachm of finely-powdered alum in each feed. Or, mix 4 drachms of alum with treacle so as to form an electuary, and place some on the tongue of the animal at various times during the day. Or, give 3 drachms of burnt alum in a pint of water.

Any one of the four prescriptions mentioned above may prove effective.

Inflammation of the Bowels.—In this complaint the temperature is high, the pulse accelerated, the breathing rapid, there is a redness of the eyes, sweating and groaning (especially when pressure is applied to the belly), The horse, in colic, invariably *throws* itself down, generally violently; but in inflammation it always *lets* itself down very gently.

Treatment: Hot water fomentations to the belly as long as is necessary, even for hours if deemed requisite. When finished apply tenderly a little white oils or liniment in order to prevent chill.

Administer the following drench every three hours—five or six times if necessary: Tincture of opium, 1 to 2 fluid ounces; spirits of chloroform, to 2 fluid ounces; chilled water to make about 8 fluid ounces in all. As soon as the pain has subsided, give a pint of raw linseed oil; also a sloppy, laxative diet.

Fever, or Chill.—The symptoms of fever are: body heated, legs and ears cold, mouth hot and clammy, respiration hurried, coat staring, cold sweats, shivering, thirst, and a rapid pulse.

To treat: Rug warmly, put bandages on the legs, rub the ears, allow plenty of fresh air without draughts, and give either of the two following drenches, repeating in four hours: Nitrate of potash, 3 drachms; camphor, 2 drachms; sweet spirit of nitre, 1½ ounces, in a full wine-bottle of cold water; or, nitrate of potash, 3 drachms; tincture of opium, 3 drachms; cold water, 1 pint.

Instead of either of these drenches you may give chlorate of potash, 2 drachms in the drinking water, three or four times daily.

Only food which can be easily digested should be given, such as bran mashes, freshly cut lucerne or grass, carrots, etc. If the animal can eat it,

a few half-boiled crushed oats may be added to the bran mashes, also a handful of nice, sweet hay. Not much of the latter must be given, however, as fever is invariably accompanied by constipation, which too much hay might aggravate. It is important that the bowels be properly regulated.

Allow the animal to drink freely of cold, clean, fresh-drawn water, and see that the bucket is perfectly clean.

Influenza.—This disease appears to be of an epidemic character, attacking neighbouring animals. It was a great cause of mortality on board ship among the "remounts" proceeding to South Africa during the Boer War. The animals were necessarily crowded in a confined space, and therefore difficult to get at to treat, rendering the mortality much greater than it would have been under normal conditions. The disease is most prevalent in the spring of the year, and usually attacks certain districts, spreading over wide areas. Young animals are the most likely to be attacked.

The symptoms are : rapid loss of strength, a dull yellowish tinge in the eye, feeble and wiry pulse, pallor of the mucous membrane of the nostrils, cough and sore throat, accompanied by a copious discharge from the nose; sometimes slight ulcers appear in the nostrils, and local swellings.

The treatment is as follows : Place the animal in a large, well-ventilated, loose box. The top door may be open day and night, provided the animal be well rugged and have its legs bandaged. Attend to the animal's requirements promptly, with as little fuss as possible, and with great gentleness and kindness. As soon as the first symptoms are recognized, administer a pint of raw linseed oil, and in the early stages of the disease give 2 drachms of carbonate of ammonia in the drinking water thrice daily. Another remedy is salicylate of sodium, 2 drachms in half a pint of water three times daily. But if this be used the doses must be decreased in proportion as the temperature falls to normal. In fact, it should be stopped at once if any great depression be apparent in the animal, as is frequently the case when it is suffering from what is known as "Pink Eye."

As an alternative drench, give the following every four hours : Powdered gentian, 2 drachms; spirit of nitric ether, 1 ounce; brandy, 4 to 6 ounces, in about half a pint of cold water. Offer the most tempting foods, such as boiled linseed, carrots, etc., and allow a plentiful supply of fresh, cold water.

It should be remembered that when an animal is suffering from Influenza, or "Pink Eye," its throat is generally sore, and the operation of swallowing is more or less painful. Patience and care should therefore be exercised when drenching.

Founder of the Feet, or Laminitis.—This is an affection which is confined almost exclusively to the fore feet. It usually arises from excessive and fast travelling on hard roads when the animal is in an unfit condition.

The symptoms are: a strong disinclination to move at all, a frequent shifting of the fore feet, throwing the fore feet as far out as possible and drawing the hind feet as far forward as nature permits, so that the weight of the body may be concentrated upon the latter, thus relieving the affected feet. On feeling the front feet, great and unnatural heat will at once be apparent, indicating severe inflammation.

Treatment: Remove the shoes at once, with as little pain as possible to the animal. Do this quickly and quietly, always bearing in mind that this is an *extremely painful* disorder. Let the fore feet be poulticed immediately with cold bran poultices, and see that they are kept constantly wet. After two or three days of cold poulticing, hot poultices should be substituted and re-applied every three hours.

A suitable laxative should be given as soon as the nature of the disease is known. A pint of raw linseed oil will do as well as anything, and it should be followed by a cooling and laxative diet. In order to keep the fæces softish, mix boiled linseed with the mashes, and if this does not have the desired effect administer about 6 ounces of raw linseed oil daily until the effect is obtained.

Give the following drench every six hours: Fleming's tincture of aconite, 10 drops; bicarbonate of potash, 1 ounce; sweet spirit of nitre, 1 ounce, and water up to half a pint.

Sawdust is better than straw for bedding. Allow plenty of cold water to drink. In the convalescent stage rub stimulating liniment into the coronets, avoiding the heels and the back of the pastern.

Laminitis always leaves evidence of the disease behind it in the shape of rings running round the hoof and converging at the heel.

Constipation.—Give a strictly laxative diet. Bran mashes only should be allowed on the first day, followed by a pint to a pint and a half of raw linseed oil, according to the size and strength of the animal. On the second

day, bran and linseed mash, with a few crushed oats in it, may be given. The night feed should always be of a laxative nature, and there should always be rock salt in the manger. *Avoid extreme purgation.*

Worms.—When the animal is suffering from these, it is generally "hide-bound," i.e. its skin is hard and non-elastic, and cannot be pulled from the ribs. There is derangement of the bowels, accompanied by ravenous appetite without apparent nutrition.

Treatment: Give bran mashes, very sloppy, with plenty of salt in them; but do not let them be too hot. After twenty-four hours of this dieting, administer a ball composed of Barbadoes aloes, 3 drachms—or, if a big animal, 4 drachms—santonin, 1 drachm, and extract of gentian, 3 drachms. This may be followed, after an interval of three or four days, by a pint of raw linseed oil. The quantity of aloes and oil must be regulated by the strength of the animal, as well as by its size.

Cough.—This must be considered a symptom of disease, not a disease of itself. To the experienced, the nature of the cough affords a pretty sure indication of the nature and seat of the disease. If it be accompanied by a harsh, dirty, staring coat, the probability is that it is caused by worms in the intestines.

The primary treatment of coughs should consist of a laxative diet and a pint of raw linseed oil, followed by one of the undermentioned remedies, whichever can be obtained the more readily: Camphor, 1 drachm; nitrate of potash, 2 drachms; powdered opium, 1 drachm; chilled water, 1 pint. Or—a useful and reliable electuary—powdered camphor, 1 drachm; chlorate of potash, 2 drachms; powdered opium, 1 drachm; honey or treacle, 5 drachms. Of this, give about an ounce a day, in two doses of half an ounce each.

Strangles.—This is a disease incidental to young horses. It may arise from a variety of causes, but it is generally due to abrupt change of diet from green food, such as natural grasses and succulent pasturage, to hard corn and dry hay, combined with the great change from the open air to the close and vitiated atmosphere of badly ventilated stables. Stable cleanliness, with an abundance of fresh air both day and night, is a great preventive of strangles, and is also essential in the actual treatment of the disease.

The symptoms are: High fever, sickness, stiffness of the neck, swellings about the jaws, running at the nose, sore throat, accompanied by difficulty

in breathing. If the swellings between the jaws are not lanced at the right time, they ripen and burst.

Treatment: Provide suitable accommodation, as in influenza; administer about a pint of raw linseed oil, followed by stimulating drinks, as in influenza. A little liniment should be gently rubbed into all the swellings under the throat and between the jaws.

LAMPAS.—This is merely inflammation in the blood-vessels of the palate. It is generally found in young horses, but an abrupt change of diet from soft to hard food will cause it in old as well as young. The mastication of the hard, dry food irritates the soft surface of the palate, and is sufficient to produce the inflammation and swellings.

I believe the horse is subjected to more ignorant treatment and unnecessary cruelty when suffering from this complaint than from any other. In the Colonies the hot iron is used without stint, and in such a way that it tears away a portion of the animal's palate, inflicting excruciating pain. I do not think this barbarous practice is much in vogue in England, possibly on account of the vigilance of that admirable institution, the Society for the Prevention of Cruelty to Animals.

Treatment: Give soft food, such as grass, bran mashes, etc. If the flesh of the palate should, through excessive inflammation, drop below the level of the incisors, make a few *slight* incisions, not deep ones, or you may sever the palatal artery. The bleeding will at once relieve the parts. Rub them with salt or powdered alum, and the animal will immediately take suitable food again.

CRACKED HEELS AND "GREASE."—Cracked heels are caused by wet and dirt. Constant exposure to wet and cold causes the heels to become hot, swollen, dried and chapped, which become cracked by motion. From the cracks there exudes an unpleasant viscous matter. An animal suffering from cracked heels will exhibit lameness when first moved, the lameness subsequently decreasing and disappearing.

Dirty stables are a frequent indirect cause of this complaint. An animal which is kept standing almost continuously with its heels immersed in the accumulated droppings and urine is sure to suffer sooner or later from the irritating effect of the acrid gases these matters are constantly giving out.

Treatment: Give plenty of soft, green diet, carrots, etc. Wash the affected parts with warm water and soap; dry thoroughly with a soft rubber,

and apply a large, hot bread or bran poultice, completely enveloped in linen, to prevent the poultice itself from coming into contact with the skin. Renew the poultice when it becomes cold. When the last poultice is removed, say in twenty-four hours after the first application, wash and dry the heels as before and apply boracic acid ointment ; rub this well but gently into the heels, cover with lint, and bandage so as to protect the heels from cold, wet and dirt. This treatment tends to prevent excessive and painful flexing of the pastern, gives the cracks a chance to heal, and will, in a few days, effect a perfect cure.

" Grease " is an exaggerated form of cracked heels, and the preliminary treatment is the same, following up with an application of zinc ointment, made of oxide of zinc, 1 part ; lard, 8 parts. In very bad cases, verdigris ointment, which is obtainable from any chemist, is an effective remedy. If " grapes " form, they must be cut off, and the heels dressed with powdered bluestone and boracic acid—one part bluestone to six parts boracic acid—mixed and pulverized in a mortar.

The process of healing causes the parts to itch. To prevent the animal from biting them in order to ease itself, a cradle must be used, or its head must be tied up short.

Mudfever.—This is of a somewhat similar nature to cracked heels, but the affection extends some distance up the leg. When the mud on the legs is dry, but not before, wash it off, and very carefully and tenderly dry the parts. The boracic acid ointment treatment is good, or you may use as a substitute equal parts of limewater and nut oil or linseed oil, shaken well together. Nut oil is preferable, linseed being so sticky. Give an aperient, with green food or carrots.

Corns.—These are not excrescences like those on the human foot, and I think the name is a misnomer. They are really *bruises*. They are generally found on the inside of the heels of the fore feet, never occurring in the hind feet, and are frequently caused by allowing the shoes to remain on too long. When this is the case the heels of the shoes lose their bearing on the walls, and press upon the sole of the feet only. The shoe thus embeds itself eventually into the horny sole and injures the " sensitive " sole, hence the bruise or so-called " corn."

The remedy is in the hands of the blacksmith. Let him pare the corn right out and insert a piece of tow, with Stockholm tar in it, between the

corn and the shoe. The new shoes should be bevelled outwards at the heel to prevent pressure on the corn.

If the corn has been pared, and is a bad one, the foot should be kept in a bran poultice for two days, and the animal given a pint of raw linseed oil, in two doses, the second dose to be given in two days after the first, and afterwards shod.

THRUSH.—This is caused by the animal constantly standing in a wet, neglected, and dirty stable. It is also sometimes the result of idleness—standing too long in the stable without exercise.

Remove the shoe; pare away the loose, ragged portion of the frog; wash the foot clean with a disinfectant and warm water; clean out the cracks with a thin stick having a piece of clean rag wrapped round the end, and dry the foot as well as possible.

There are many remedies for this complaint, but I have used successfully permanganate of potash, a few grains mixed with boracic powder, about 1 to 8. Pulverize well in a mortar and apply it to all the cracks, or make a solution and, with a piece of tow, press it in gently with the stick.

If possible, keep the shoe off and work the animal with tips only, shortening the toes so as to throw more pressure on to the heels.

CANKER.—This is practically neglected thrush, and is characterized by a separation of the horny substance from the sensitive fleshy and the bony portion of the foot, caused by the development of a fungoid growth in various parts of the frog and foot. The disease may be readily identified by the horrible odour attending it. It is difficult to cure, and the services of a qualified man are generally necessary.

Treatment: The shoe must be removed, all the diseased parts must be cut away, and the foot dressed with some strong acid, such as butter of antimony or nitric acid. The foot must be kept perfectly dry, and should be padded well with tow and enclosed in a clean bag, so as to afford the necessary pressure. As soon as new and healthy horn appears, other astringents may be used, such as burnt alum, bluestone, chloride of zinc, etc. When the animal is fit to be shod, have it done, but without calkings—just a plain, flat shoe.

STRINGHALT.—This is a nervous disease, consisting of, or rather characterized by, an involuntary and convulsive jerking upwards of the hind legs, sometimes with such violence that the hoof strikes the belly hard enough to produce abscesses It is very prevalent in some parts of Australia and

South Africa. Its real origin is still a mystery to veterinary science, a mystery which post-mortems have done nothing to elucidate. It is doubtless a germ disease, and seems to be to a large extent indigenous. At any rate, it certainly attacks animals located upon clearly defined districts, and animals outside of, although in immediate proximity to, those districts, escape infection. In Australia I have frequently heard some such remark as the following: "I shall not put my horse in this or that paddock, or it will be sure to get stringhalt."

The disease varies greatly in intensity. In some cases, when the animal has lifted its hind feet, it appears to have to exercise great muscular force to get them on the ground again at all This is especially noticeable in the animal's *first* attempt to move, the feet sometimes striking the ground so violently that the concussion snaps the shoe. On the other hand, the affection is so slight in some cases that its existence can only be detected by very close observation.

Not only is there no known cause for the disease, but there is also, unfortunately, no known cure.

Navicular Disease.—The fore feet only suffer from this disease, causing the animal to (almost) walk upon its toes, in very gingerly fashion. The lameness is consequently more conspicuous when it is going down hill. When it is lame in both feet, it always has a decided and peculiar motion. In all cases of long standing, contraction of the heels exists. This is the result of the animal having abstained for a long period from using its heels.

Treatment: There is none that will cure. Neurotomy simply relieves the animal from pain by destroying the sensibility of its foot—the disease itself remaining. The operation in question should be performed by a qualified veterinary surgeon. An ignorant operator is just as likely to sever the artery as the nerve, with disastrous results. Horses on which this operation has been performed may be readily recognized by the peculiar method in which they throw forward the fore feet when trotting or walking. They bring their feet down entirely on the heel of the shoe, which always shows signs of excessive wear.

Sprains.—If the sprain is deep-seated in the muscles of the body, ascertain its location by a slow and careful pressure. Let the animal have absolute rest, and foment the affected part very liberally until the inflammation has entirely subsided; then apply a biniodide of mercury blister, well

rubbed in. Secure the animal so that it can neither bite, scratch, nor rub the part.

If the horse is in "top" condition, give it only soft and laxative food, followed by about half a pint of raw linseed oil.

Sprains in any of the limbs are much more easily diagnosed and treated. Give complete rest and apply cold water bandages. If convenient, let the hose trickle on the affected part. On no account permit the bandages to become dry. Let them remain on throughout the first two days and nights, then remove them at night and replace them in the mornings, until all inflammation has passed away; afterwards apply a blister. If merely a mild or sweating blister be thought necessary, use one part of biniodide of mercury to twelve of vaseline or lard. This may be repeated after nine days if necessary. When a blister of this strength is used, a rest of three or four days may suffice.

The usual strength of a biniodide of mercury blister consists of one part of biniodide to eight parts of vaseline or lard, and should only be used in the treatment of bony enlargements, or enlarged bursæ.

If operating near the heel, or any part where the skin is thin, cover with grease of rather a hard nature the parts to be protected from the blister, or very painful and tiresome sores will result. Use only a small quantity of blister at a time, to prevent it from running where it is not required; and remember that without plenty of friction, otherwise "elbow-grease," little or no benefit can result from the application. After the blister has been on for a couple of days, wash the leg carefully with soap and warm water; do not remove the grease from the heel; pat the leg with a soft towel, and apply as an emollient any nut or vegetable oil 4 parts, solution of subacetate of lead part 1. Apply this with a soft paint-brush as often as is necessary until, and even after, the skin and hair have fallen off *en bloc* like crusts.

Rick, or Chink in the Back.—To detect this injury, the thumb on one side and the fingers on the other must be pressed rather heavily along each side of the spine towards the croup. When the hand reaches the loins, just above the kidneys, the horse will crouch down and show signs of pain. The existence of the injury cannot be detected by any outward sign, but, nevertheless, there is probably a severe injury to the vertebrae and its attendant ligaments.

A horse so afflicted will always show it when being mounted, but

when the rider is fairly seated the animal may assume a tolerably sound gait.

This injury is much more prevalent in the Colonies than in Great Britain, as there horses are much more likely to be roughly used when wanting in condition and strength than is the case in England.

A horse will often kick when about to be mounted, well knowing the pain about to be inflicted.

Treatment is absolute rest for at least six months and application of tincture of arnica and water ; after all inflammation has subsided, an application of a mild stimulating liniment every morning, but not so severe as to cause a blister ; if such should occur, cease the rubbing, and as soon as friction can again be endured, the stimulant should be renewed. The animal should of course be well fed, and the bowels regulated by a relaxing diet.

Mange.—This disease is very readily propagated by contagion, and it is therefore a very serious matter when a case originates among a large number of horses. The irritation causes the affected animal to bite, scratch, and rub itself against any adjacent object, so that the parasite is easily transferred from one animal to another.

Horses that are well and properly fed and groomed are less likely to contract mange than those which are poor and in bad condition, insufficiency, poorness, and unsuitability of food, lack of grooming, etc., all being accessories to the inception and development of the disease. The parasite burrows into the skin, lays its eggs, then dies. As these eggs hatch, so fresh relays of the parasites are produced. I have had an extensive experience, principally in Australia and South Africa, with mange of various kinds, and in my opinion, where many horses are affected, a dressing of any kind of good sheep dip should be used freely. The proportion is one pound of the dip to two gallons of water. It should be used warm, mixed with soft soap, and well rubbed into all parts. This application will probably kill the insects in the skin, but not the eggs, which will hatch and produce a fresh outbreak. The dressing should be allowed to remain on, and a further application should be made after an interval of eight or ten days.

Another excellent dressing is a mixture of oil, sulphur, and acetic acid. The proportions are (as correctly as I can give, for I have never really measured them) 1 quart of nut oil, 4 to 6 ounces of black sulphur, and 2 ounces of acetic acid. Apply one dressing of this mixture (after the horse has been

washed), and allow it to remain on for a few days. No further dressing is required, and it is astonishing how quickly the hair will grow afterwards on parts which were affected.

Before any dressing is applied it is advisable to clip the animal, and the clipped hair should be carefully burnt upon the spot. The clippers should then be cleaned, and soaked in a disinfecting solution for an hour or two. Every article of clothing or harness must be well washed with the disinfectant (a fairly strong solution), likewise the stables—using an ordinary whitewash or scrubbing brush for the purpose. The fluid should be well thrown about into all corners, and more than one such dressing should be given.

Mange is easily stamped out if prompt measures are taken, but if once allowed to spread, the stamping out becomes an almost impossible task.

Ringworm.—This disease commences on any part of the body and shows itself in round patches, nearly or quite bare, which spread with rapidity over the adjacent parts. A horse in good, fat condition is as liable to contract the disease as a poor one, in spite of the fact that some authorities hold a contrary opinion. It is extremely contagious, and is a most difficult thing to get out of a stable when once established in it. It can also be communicated from the horse to other species of animals, and to the human being.

Treatment: A laxative diet or a few mashes, followed by half a pint of raw linseed oil. No musty or bad food must be given. For local treatment, first wash well the affected and adjacent parts in warm water, in which to every pint one tabloid of hydrarg. perchlor. has been dissolved, and soap. Do not dry. Then rub in lightly some ointment of iodine, 1 part iodine, 8 parts lard, with a few drops of glycerine. One application of this is generally sufficient to effect a cure. Watch for other outbreaks, and treat them in a similar manner.

Wounds.—Science will not heal a wound; it will only assist nature to do so. There are many kinds of wounds known to veterinary practitioners under technical and different names, but, as this book is primarily intended for those who, by force of circumstances, are compelled to do their own "vetting," my advice will be terse and to the point.

An *incised wound* may be healed by what is known as *direct union*, if *no* inflammation exists. First clean the wound, using lukewarm water, and, when it has stopped bleeding, exclude air by applying lint soaked in carbolic oil, or Friars' balsam. This must be kept on by a cold water bandage, which

should be constantly wet and not removed for three or four days. Or, wash the wound as described, and dust a little boracic acid on it and adjust the bandages. It is easier to bring the edges of the wound into complete juxtaposition if the hair near them has been previously removed.

Healing "*by first intention*." In this there is slight inflammation, but it is not of a destructive nature, and the only evidence of its existence is in the generation of lymph in the wound. The treatment is the same as in the case of incised wounds, except that the wound should be dusted with oxide of zinc 1 part to 8 parts boracic acid; reduce the inflammation by warm water applications.

Healing by "*Scabbing*." This is generally a long process, owing to the difficulty of excluding the air. A covering of collodion is very useful for this purpose, but when the wound is merely skin-deep, I have found the best healing agent to be a thick mixture of whiting and water, with the addition of a small quantity of carbolic acid—just sufficient to give the mixture a distinct smell of the carbolic. The jar should be fitted with a lid, to exclude dirt, dust, etc. This is an excellent remedy, and it should be kept in all stables where there are working horses.

Healing by "*Granulation*." This process takes place when there is loss of structure, and when there are consequently cavities to be filled up. The granulating action must commence from the end or bottom of the wound, and it is therefore necessary that all deep wounds be kept open until it is certain that the end is quite healed. The best way to keep a wound open is to insert a rowel or a pledget of medicated tow just within the mouth of it.

The following are two good powders for application to wounds generally: 1 part iodoform to 20 parts boracic acid, or equal parts of burnt alum and whiting.

For "indolent" sores use bluestone, 1 ounce to 1 pint of water—the water to be boiled previous to use. Or, if a powder be preferred, use 1 part iodoform to 10 parts boracic acid. In bad cases, just dust on the wound red biniodide of mercury.

For *abrasions* use the following lotion: Carbolic acid, 1 fluid ounce; glycerine, 4 fluid ounces; water, 15 ounces. This is also a very useful lotion for all kinds of wounds. It can be applied with a feather to deep wounds, or by tow or lint, etc., as may be most convenient.

For *maggots* in a wound, apply with a feather nut-oil and turpentine

in equal parts. When washing the wounds, always dissolve in the water hydrarg. perchlor. tabloids—1 tabloid to a pint. In fact, all wounds or excoriations of any description should be washed in this solution.

Sore Shoulders.—If the wound is a small, deep-seated one, "chamber" the collar so as to prevent it from touching the wound. If it be excoriated and tender, extending over a wide surface, wash it carefully with soap and warm water, sponge well, using a little salt, alum, or vinegar in the sponging water, dry carefully with a soft rubber, then apply vaseline or a little boracic ointment. If a "sitfast" has formed, the hard scab must be removed daily and the wound dusted over with biniodide of mercury (red powder).

Broken Knees.—Cleanse the knees thoroughly with warm water, taking care to remove all grit. Saturate a plentiful supply of tow with carbolic oil, covering the wound completely with it; afterwards wrap the tow lightly with one bandage, or with two, if necessary. Remove all bedding. Give the animal half a pint of raw linseed oil and a few mashes. Keep it quiet, with its head tied up, and do not let it be moved under *any* circumstances. Let there be a constant and plentiful supply of water in the manger, and see that the diet is of a laxative nature.

Brushing, a habit of striking the legs with the hoofs, generally results from either weakness or malformation. But it may also be caused by the shoes being too wide. A careful examination will at once reveal the real cause. If the habit is the result of weakness, and the animal is a young one, good food and time will generally effect a cure. If caused by any malformation, preventive measures must be taken in the shoeing, and "brushing boots," of which there are many kinds, must be used. Or, better still, use a "Yorkshire boot." This consists of a thick bandage of old blanket, about ten or twelve inches wide, which must be wrapped loosely round the leg just above the fetlock, tied round the middle, and the upper portion pulled over the lower, to protect the fetlock from injury. If properly done, this has quite a neat appearance (see Plate 60, Diagram 61).

Sitfasts and Warbles.—A warble is a hard, tumour-like excrescence that forms on the animal's back, immediately under the skin, and is generally caused by a badly-stuffed saddle or an indifferent rider.

Treatment: First have the saddle re-stuffed with good curled horsehair. Then, after having watered, groomed, and fed the animal, prepare a "meadow-

hay poultice " in the following manner : Put a quantity of hay into a bucket, and when it is moderately pressed down, pour upon it sufficient boiling water to cover it ; cover the bucket with an empty bag, and after the hay has been steeped for fifteen to thirty minutes, take it out and put it into a clean bran bag. Double the latter up crossways, and place it on the animal's back. Put the rug over it and pull the surcingle rather lightly. The poultice should be as large as the seat of the saddle. As a result of this treatment the warbles will, as a rule, have disappeared by the following morning, but, if necessary, apply another similar poultice. This method of dealing with incipient warbles may be considered crude and possibly empirical ; but I can assure the reader that I have both used it and seen it used on a great number of occasions, and I have never known it to fail.

Sitfast.—This is simply a warble which, owing to neglect, has developed into a sore. Poultice it with hot bran or hay for a day or two, then cut off the dead skin or scab and apply lunar caustic daily, or dust the sore daily with biniodide of mercury, after bathing it. Do not allow the hard sore to form again. The healing process is generally a very long one, and regular daily attention must be given.

Lymphangitis (Weed, or Monday-morning Fever).—It is called the latter owing to its most frequently developing on Sunday, and being quite apparent on Monday morning. Doubtless Sunday's rest precipitates its development. It is an inflammatory disorder attacking the fore or hind leg, and producing swellings which " pit " under pressure by the finger, and which are sometimes of very considerable size.

Treatment : Give a physic ball of from 3 to 6 drachms, according to the size of the animal, or up to a full wine bottle of raw linseed oil. Swathe the affected limb in bandages, and bathe continually with hot water until the acute stage is passed. Put about 4 drachms of nitrate of potash in the drinking water two or three times a day. Give walking exercise two or three times a day. After the inflammation has subsided, and there is no longer any necessity for the hot water fomentation, let a little embrocation be gently rubbed in the parts.

Splints.—These generally appear on the inside of the cannon-bone of the fore legs. In the process of development they frequently cause lameness, but when they are fully formed and the inflammation attending their formation has subsided, the animal will generally go sound again.

Treatment: Examine the shoes, as "splints" may be caused by *striking*. As a rule, they develop at the age of two, three or four years, and disappear at the age of five, six or seven.

If the splint does not cause lameness, leave it alone. If there be pain under pressure, combined with heat and throbbing of the blood-vessels near the part, it *will* cause lameness. After a course of cold wet bandages apply biniodide of mercury ointment in small quantities, well rubbed in. If a cure is not effected, enlist the services of a qualified veterinary surgeon.

Sidebones.—This is the name given to an ossification of the cartilages that constitute the coronet, producing a loss of elasticity in the affected part. Pressure will readily determine whether ossification has taken place, and the exostosis, or bony enlargement, will be also quite visible, as a rule. Horses affected with sidebones show more lameness on hard than on soft ground.

Treatment: When the complaint is in course of development, give the animal rest and apply cold wet swabs, and use a bar shoe. This may arrest the progress of the disease. But when once thoroughly formed, sidebones are quite incurable, and the animal suffering from them becomes fit for nothing but farm work.

Ringbone is an exostosis on the pastern joint. It is generally visible, but can always be detected by the hand. It more often appears in the hind than the fore pasterns.

Horses with very long pasterns, or very short ones, are most subject to this disease.

Treatment: Rest, with cold swabs; afterwards, a blister of the ointment of biniodide of mercury. The animal should be shod with leather in the usual manner.

Spavin.—This is a bony enlargement in the hock, located inside and in a backward position of the lower part (see Plate 60, Diagram 59). It is fully described in the chapter on "How to Examine Horses as to Soundness." The usual treatment is firing, but when spavin is fully developed it cannot be removed. Like all other exostosis, however, it generally diminishes in size as the animal gets older.

Curb (see Plate 60, Diagram 60). This is a swelling at the back of the hock, about three of four inches below the point. It may be best located by viewing the hock sideways from the point downwards. It may be

the result of a kick or blow of any description, self-inflicted when slipping, rearing, or jumping. Or the curb may be the gradual development of a naturally bad and weakly-formed hock. In the latter case, lameness will not be so likely to attend the development of the curb as in those cases where it is the result of accident.

Treatment: A prolonged rest is necessary for the animal and a good "hoseing" daily will be beneficial. If the lameness continues, a biniodide of mercury blister (1 part to 8 of lard) or "firing" must be resorted to.

Glanders and Farcy.—These are essentially one and the same disease. As is well known, it is highly contagious and fatal.

Symptoms: A sticky discharge from one nostril, generally the left one, the mucous matter remaining dry and crusty on the nostril. The lining membrane of the nose becomes of a dull, coppery colour, and small ulcers appear on it. The gland under the jaw becomes hard and swollen, until it is about the size of a pigeon's egg, and adheres firmly to the jaw-bone. "Farcy-buds," which are hard swellings about the size of small nuts, appear, connected together by what are called "farcy cords." These "buds" may break out in any part of the body, but they are generally found on the inside of the thigh and hind legs, and on the neck. These horrible sores grow larger, and discharge a thickish yellow fluid, not in any way resembling the white pus from a healthy wound. It is practically impossible to mistake the symptoms of the disease, and the only cure is *the gun*. Everything that has touched the infected animal must be thoroughly disinfected or destroyed, or the losses of the owner will never cease.

Glanders is transmissible to other species of animals, and also to the human being.

Horse Sickness.—So far as I am aware, this formidable disease exists only in South Africa. As its name implies, horses are its principal victims, but mules are also liable to contract it, although their susceptibility to it is much less. It appears in the summer, continues up to autumn, and disappears at the first appearance of frost. That is to say, fresh cases do not occur after the frosty weather has set in. Up to the time of the Boer War the disease appeared to confine itself to certain districts, many parts of the country being considered, up to that time, to be quite free from it.

I saw a great deal of this "horse sickness," of which there appear to be

several varieties. One form, which may be described as "internal," chiefly affects the lungs, producing no external swellings. Although I understand that this is the most common form, I did not see so much of it as of the kind known as "Dik-Kop." This variety of the disease causes the head to swell very much, hence its name, which means "Big-Head." It is also known as "Blue Tongue," or, in Taal, "Blawtong." The throat and neck, as well as the head, swell, and the animal soon refuses to eat; the tongue has the appearance of having been roughly cut or sawn across in several places. The inside of the mouth becomes intensely sore, making it impossible for the animal to masticate dry food. It is only by suction, or by means of the bottle, that any nourishment at all can be received. Some authorities consider that "Dik-Kop" is not so quickly fatal as the first-mentioned variety of the disease, but my experience leads me to think that there is not much difference in that respect. In either case the treatment must be *very prompt* to be of any service.

There is still a third form of the malady, one which attacks the digestive organs only.

Without a doubt the disease, in any one of its phases, is highly infectious. There is practically no reliable information to be obtained as to the modes of contamination, but probably, in the form that attacks the lungs only, the infective agent passes through the nostrils in breathing. As regards "Dik-Kop," the use of the same bit will convey the disease from the sick to the healthy animal by inoculation; whilst in the third variety of the disease the germ of infection has probably been received in the food.

Horse sickness, in all its forms, seems to be most prevalent in low lands, and it also appears in some way to be connected with the dew or night air, within certain localities and during the seasons already mentioned. It is seldom contracted on high hills or mountains, but it is known to exist in the deep kloofs and valleys in the mountainous districts. Immunity seems to lie in avoiding the valleys, and keeping the animals on country considerably elevated above the immediate surroundings.

The general impression in South Africa is that the infective agent is *solely* contained in the dew deposited on the grass, etc., and in the dewy air, and that the dangerous period is just before and after sunrise; for when the sun has dispersed the dew and the grass has become dry, all danger seems to have passed away. A commercial traveller once informed me that he had

used horses for many years in all parts of South Africa, and had never had a fatality from horse sickness. He attributed the immunity to the fact that, when "on the road," he invariably kept a "horse-boy" to do nothing else but look after the horses. The boy used to bring them into the camp at a certain hour in the early morning—I forget whether he said 3 or 4 a.m.—and the animals were always kept, when grazing, on the high land whenever possible. It appears from this that the sickness *is* avoidable if care be constantly exercised, even if passing through an infected area.

During my South African career I had to deal with some 300 cases of "Dik-Kop," or "Blue Tongue." The presence of the disease is not usually discovered until the animal refuses to eat, or until a slight swelling is noticed round the mouth. The first thing to be done in such cases is to examine the mouth, which, if infection has really occurred, will at once bear evidence of "blue tongue" both on the tongue and inside the lips. My method of treatment was simple, but it was assuredly most effective. I used the following powder, consisting of alum 1 part, boracic acid 4 parts, pulverizing both very finely in a mortar. I syringed the mouth with about 4 ounces of a strong solution of permanganate of potash, then jerked in a sufficient quantity of the powder to cover the affected parts. By adopting this treatment twice daily I cured every case that was submitted to me providing the disease was in the *incipient stage*, although in some instances the period of convalescence was very prolonged, the animals being reduced to a weak and emaciated condition. In some of them the temperature rose to 106·2, but recovery eventually followed.

In the internal form of horse sickness there is little that can be done by medicinal agents.

In all the forms of the disease the pulse is abnormally quick and the temperature rapidly rises. In some cases, even before death, there is a copious discharge of dirty yellowish froth from the nostrils, somewhat resembling the froth on freshly-drawn porter. *After death* the froth continues to flow, until there accumulates what might be termed a fairly large heap of it. This exuded matter should be thoroughly destroyed by burning, or in some other equally effective way, as no doubt it contains the active infecting germ. But whatever the latter may be, it is abundantly proved that a humid surrounding is necessary to enable it to flourish, and that it cannot survive in the sunshine and light of day.

One authority advocates preventive measures by the administration, during the season when horse sickness is known to be prevalent, of small, continuous doses of arsenic and sulphur, namely, liquor arsenicalis, 1 fluid ounce daily, with about 4 drachms of flowers of sulphur.

Another writer says that alcohol in half bottle doses (cheap brandy), diluted with half a similar quantity of water, is a cure for the disease, "although the animals naturally become intoxicated in the process." This treatment does not commend itself to me. It is possible that alcohol, administered in quantities sufficient to stimulate only, may be useful, but beyond that I fail to see how it can possess any remedial value.

Undoubtedly, there is yet much to be learnt respecting both the real nature and the treatment of the disease, and, considering the great number of qualified veterinary surgeons now (1904) resident in South Africa, we are reasonably entitled to hope that in the near future more light may be thrown on this mysterious disorder.

Biliary Fever is another kind of equine fever which seems prevalent in South Africa. As I stated in my book, *War Horses, Present and Future ; or Remount Life in South Africa*, "I believe that every equine disease, known and unknown, is to be found rampant among the horse stock of that country." The opinion I then expressed (1902) was confirmed by the official reports issued after the termination of war. The particular fever under notice was very prevalent in some of the remount depôts, but, as it happened, comparatively few cases came under my personal supervision. The complaint is regarded by some veterinary surgeons as another form of horse sickness, but this theory seems hardly tenable, in view of the fact that biliary fever has been pronounced non-infectious.

Symptoms : Considerable thirst, loss of appetite, and constipation. The membranes lining the eye become yellow, the inside of the lips slightly so, and the fæces are covered with a yellow-tinged mucus. The temperature rises to 106° F., sometimes even to 107° F.

Treatment : The following drench should be given at once : Fleming's tincture of aconite, 10 minims, chloride of ammonia, 6 drachms ; and water sufficient to make half a pint. This drench should be given every four hours during the first two days, and once or twice a day afterwards, if necessary. If, as is almost certain to be the case, the bowels are constipated, inject warm water and soap, followed, if necessary, by two

or three ounces of raw linseed oil warmed to blood heat. Induce the animal to feed by giving it anything for which it shows an inclination. Bandage and rub it well, but allow plenty of fresh air.

Ticks.—In certain parts of South Africa and Australia these are very common, the most venomous species being the "Bont" tick. Dogs, calves, and foals, more especially the first-named, are frequently killed by these pests in Australia, in which continent, however, the infested area is limited and small compared with that of South Africa. Fortunately the majority of the numerous varieties of "tick" are comparatively harmless, although they are all very unsightly and disgusting. In South Africa they are rarely found to any extent at any part more than 100 miles from the coast. In Australia, although much more prevalent near the coast, they are frequently met with in the virgin forests, irrespective of the distance from the sea.

Any good sheep-dip will soon kill the vermin. When they are embedded in the skin, they should not be pulled out, but cut in half with scissors. The head portion of the insect will then fall out of itself, and no swelling will ensue.

Medicines.

Fever Drench.

(1)	Nitre	3 drachms.
	Camphor	2 „
	Sweet spirit of nitre	1 ounce
	Water	1 pint.
(2)	Acetate of ammonia	3 ounces.
	Nitre	2 drachms.
	Water	1 pint.

Cough, Electuary.

Powdered camphor	1 drachm.
Chlorate of potash	2 drachms.
Powdered opium	1 drachm.
Honey or treacle	4 drachms.

Made into an electuary.

Colic Drench.

(1)	Tincture of opium	1 fluid ounce.
	Spirit of chloroform	1 „ „

Aromatic spirit of ammonia . . . 1 fluid ounce
Carbolic acid . . . . . 10 minims.
Water . . . . . ½ pint.

The above drench can be repeated every 2 hours, for 3 or 4 times.

(2) Chlorodyne . . . . . 1 fluid ounce.
Warm water . . . . . 1 pint.

Can be repeated in one hour interval.

About half-an-hour after the first dose, give one to 1½ pint of raw linseed oil when using number 1 or 2 formula.

(3) Tincture of opium. . . from 1 to 2 fluid ounces.
Spirits of turpentine . . from 1 to 2 „ „
Raw linseed oil . . . . . 1 pint.

Anti-purgative Drench.

Powdered alum . . . . . 2 drachms.
Tincture of opium . . . . . 1 fluid ounce.
Powdered ginger . . . . . 2 drachms.
Warm water . . . . . 1 pint.

Healing Lotion.

Carbolic acid . . . . . 6 drachms.
Olive Oil . . . . . 1 pint.

Liniment.

Spirits of turpentine . . . . 1 fluid ounce.
Liquid ammonia . . . . . 1 „ „
Olive oil. . . . . 8 ounces.

Cooling Lotion.

Acetate of ammonia . . . . 4 fluid ounces.
Spirits of wine . . . . . 4 „ „
Water . . . . . 8 „ „

Keep the part wet with a cloth or bandage.

Stimulating Liniment.

Oil of turpentine . . . . 8 fluid ounces.
Camphor . . . . . 1 ounce.
Soft soap . . . . . 4 ounces.

Stimulant (Internal).

Spirits of nitrous ether . . . 1½ fluid ounces.
Aromatic spirits of ammonia . . . 4 drachms.
Water . . . . . 1 pint.

Purgative Drench.

Powdered Aloes (from)	3 to 5 drachms.
„ ginger	2 drachms.
Warm water	1 pint.

Tonic Drink.

Quinine, ½ to 1 drachm, dissolved in a few drops of sulphuric acid and a pint of water.

Black Oil.

Olive or nut oil	1 pint.
Spirits of turpentine	4 fluid ounces.

Mix well and add—

Sulphuric acid	6 fluid drachms.

POLO

A PRACTICAL TREATISE ON TRAINING PONIES AND PLAYING POLO

BY FRED GALVAYNE (MANAGER, SOCIÉTÉ DU POLO, PARIS)

THE perfect polo pony! How full of significance are these words, and how few and far between are the animals which really deserve the description! There is a difference almost as wide as the poles are asunder between the *really* good polo pony and the indifferent one. Playing on the former constitutes a moral education in itself; playing on the latter will turn even a saint into a sinner, "fit for treasons, stratagems and spoils." Place the mildest of men on an indifferent pony in a match, and observe the speedy and complete metamorphosis which ensues. Be he the living incarnation of "sweet reasonableness" and philosophical serenity, the *probability* is that in the briefest possible space of time he will be swearing with a volubility and variety of expletives picturesque enough to excite the envy even of a cockney cabby.

It will rightly be inferred from these preliminary remarks that the game of polo exercises a great influence on the player — for good or evil, according to circumstances. If the latter be propitious, the influence is edifying; if not it is entirely the reverse.

The task of bringing a pony to a state of perfection necessitates the expenditure of an amount of time, labour and skill, which will not be credited except by those who have actually "been through the mill." And, in spite of every effort and the most assiduous attention, it is decidedly problematical whether the pony will eventually turn out thoroughly satisfactory. The "making" of a hunter is, in the majority of cases, child's play, as compared with the "making" of a polo pony. If a young horse, with hounds, shows a little interest in things, be not asked to do too much for the first few times, be allowed to get accustomed to the hounds and the

field, and "popped" over a small fence or two behind another horse, the "young 'un" is very soon "made." With the polo pony it is quite different. An immense amount of actual *drudgery* is absolutely necessary, drudgery which the training of a hunter does not entail. In the case of the hunter, too, there is a considerable amount of change, excitement and pleasure attending the training, which largely counterbalances any tedium there may be. It is not surprising, therefore, that where you find one man who can "make" a polo pony, you find ten who can "make" a hunter. It must be remarked, however, that some "green ponies" so quickly develop an aptitude for the game that one is almost inclined to think the gift for polo is inherent in them—that, in fact, they are *born*, not *made*.

Now with regard to the selection of the pony we desire to train. When choosing a pony with the idea of making it into a polo pony it is important to bear in mind that *temperament* should be the primary and *conformation* the secondary consideration. My experience leads me to the conclusion that buyers frequently make the great mistake of reversing the order of importance of these qualifications when making their selections. Ponies are frequently chosen solely on account of the beauty of their formation, no regard whatever being paid to their character or temperament, which may be such as to render them quite "impossible" for polo purposes. Whether one pony only is required, or a hundred, each and every one should be thoroughly ridden and tried before purchasing. An equable temperament is an absolute *sine quâ non* in a good polo pony. If, during the trial, it refuses to stop, by poking its nose out, and walks away in a headstrong manner, or shows much nervousness or any other indications of wilfulness such as refusing to back or rearing, or if the pony shows irritability by grinding its teeth, champing its bit, laying its ears back, or pawing with its fore feet, etc., etc., when required to stand still, or under any other fair conditions, it should be unhesitatingly rejected as being unfit for polo. For in nearly *every* case, such defects (except nervousness), if exhibited before the commencement of the training, will become intensified during the "making," the ultimate result being that the pony will be entirely valueless for the purpose for which it was intended. As regards formation, I am rather inclined to endorse the remark once made by a noted horse-trainer to the effect that "they go in all shapes," i.e. that the excellence or otherwise of the pony's conformation is no criterion of its ability. In other words, a first-class polo

pony *may* be symmetrical in appearance, or it may not. By all means secure the ideal combination of real good looks and equability of temperament if it be possible to do so, but, when it becomes necessary to make a choice between the two, remember that it is the latter which is *indispensable*. Disregard of this will involve endless trouble, inevitable failure and disappointment, and, in the majority of cases, serious financial loss. Supposing we buy a pony with the idea of getting our pocket-money out of it, or, perhaps I had better say, making it pay for its keep (for it will do little more), we start with a " green " one, i.e. not a " natural " player, but one quiet to ride and fairly handy.

The first thing to be done is to get a

GOOD MOUTH

on the pony, by no means a trifling undertaking in many cases. Personally, I think there is nothing like long-reins to accomplish this, using them as described in chapter " Teaching the Colt to Obey the Bit." Great care must be exercised to avoid getting the mouth sore, and the lessons should be of short duration—better *two* of *half* an hour each than *one* of an hour. Should the pony exhibit any signs of sulkiness, *insist* upon doing (if only in ever so slight a degree) that which you were attempting to do ; then " knock off " until the next lesson time.

With long-reins the driver can drive always in a circle, walking in the smallest possible circle himself, and driving his horse round him in the largest. He should hardly touch the mouth, unless he wishes the pony to answer to the bit, in which case there should be no hanging on, but a sharp, short pull —not a jerk—as severe as the mouth may require to cause it to carry out his ideas. The lessons must be continued until the pony will turn right or left, and by *short stages* come back quickly and sharply, practically by the weight of the reins alone, and without showing any resentment. I think that when a pony will *back* thoroughly—that is, almost without assistance—say, for forty yards, by a series of short distances of, say, three or four yards at a time, it is about three parts " made." This constitutes a big test for the temper and, of course, would have to be led up to step by step. The reason there are so many ponies with

BAD MOUTHS

is, I think, because of attempts to " make " their mouths by riding them, in-

stead of driving them in long-reins. A man has not a quarter of the power when "on top" that he has when on the ground (assuming that he understands the use of long-reins), and the pony does not connect with the man any severity which it may be necessary to use to the same extent as it would if the man were on its back. Keeping the pony in a

GOOD TEMPER,

and giving it a liking for its work, by making everything for it as pleasant as possible, is most important. Many a pony is irrevocably spoilt by putting it into a game before it is ready. The *bullying* necessary to get any sort of a game out of it utterly sours it, and gives it such a bad impression of the game and everybody and everything in connexion therewith that it rarely forgets it.

Should the pony "wear its head" too high, a standing martingale will be required; if too low, an overhead check will be necessary; and after it is thoroughly handy, before proceeding to ride it, a pair of riding-reins or straps with a buckle and point at each end should be fastened to the bit (an ordinary stout *bar* snaffle is the best unless the pony has a dull, dry mouth, in which case a four-ringed snaffle may be used), crossed over the withers and fastened to the side of the pad, the *right* rein on the *left* side and the *left* rein on the *right*.

The riding-reins or straps must be sufficiently long to enable the pony to bend its neck to either side with a fair amount of ease, but short enough to cause pressure on the side of the neck away from the direction in which he is being turned. This will help considerably towards teaching it to *rein from the neck*; but, although very necessary, it must not be done *too* frequently, as a little more "give and take" is wanted, and this can be better given when

RIDING.

When this commences, a field or riding school is necessary. See that the pony has a suitable bridle—the *easiest* that it is is possible to manage it with, as rearing and other vices very soon result from over-bitting. Ride in a circle, an equal length of time each way, principally cantering and walking. Ride with a loose rein, but see that the pony keeps its *head always* in the *proper place*, and also that it is going—when cantering—with the proper leg forward, i.e. the right when circling to the right, the left when going to the left. Gradually reduce the size of the circle day by day, until the pony can,

metaphorically speaking, turn on the proverbial threepenny-piece. Afterwards ride in a figure of eight, the size of which should also be gradually decreased. A good schooling in a circle, as above described, will render it a simple matter to make the pony change its legs nicely in the figure of eight. Nothing should be continued for a sufficient length of time to make the pony lose interest or show resentment, so a half-hour's lesson might consist of trotting and cantering, stopping with a short, sharp, decisive pull (just forcible enough to carry out the object of the rider, and no more), dropping the hands instantly on the withers, or, in other words, slackening the reins, then backing, or striking again into a canter from the "stand."

To get a pony to *stop* instantly, no matter how fast the pace, is one of the *most important and essential* objects of the training. It must stop with its head *up*, if anything, rather than *down*; there must be no "*reaching*" at its bridle, because, to stop properly the pony must do so from its *hind legs*, whereas, if the head is down, the stopping is done from its shoulders. The best results are obtained with a pony which arches or bends its neck well.

More pressure of the reins should be brought daily to bear on the side of the neck *opposite* to the direction in which the pony is being turned, and both *hands* are necessary in the beginning to carry this out.

In turning to the left, the right hand should be raised somewhat and the rein in that hand shortened a little, bringing the pressure of the rein well forward on the neck. The left hand should be touching, or nearly so, the left knee, and the rein sufficiently short to draw the pony's head round to turn it, the rider's body leaning well in the same direction. The left leg should be well back and pressed against the pony's flank, with as much force as may be necessary to induce the pony to turn its quarters away from the heel of the rider, and the right foot should touch the pony's elbow. All this should be done methodically, the legs always assisting the hands. In fact, it is hard to say which play the more important part in the training, the legs or the hands; but in any case the leg work is absolutely indispensable. Of course the whole process is exactly reversed when *turning to the right*. This part of the training should be done at a walk first, increasing the pace daily.

Another and perhaps the quickest method of giving a pony the idea of reining from the neck (viz., to turn to the right when pressed by the rein on the left side, and of course *vice versa*) is effected by crossing the snaffle

reins under the neck bringing the right rein up on the left side and the left rein up on the right side, and buckling the hand parts in the ordinary way. The reason of the efficiency of this system can be illustrated thus. When turning to the right, not only is a pressure put on the left side of the neck, but on the right side of the bit, being the direction it is desired the pony should turn. If the reins were not crossed, the pressure on the bit would be opposite to that which you desire the pony to go. This circumstance explains the great difficulty experienced when training ponies to rein from the neck. The rein which is not crossed should be used at the same time as the other, as this will be found to rather accelerate the training.

The ideal combination in this method is the use of the rein which comes direct from the mouth simultaneously with the one that is crossed; for example, supposing we turn pony to the left, the crossed rein on the right should be pressed hard against the right side of neck (the crossed rein on left would then be *quite slack*), and the left rein coming direct from the mouth should be pulled in the ordinary way. When *both* reins are crossed, those on the opposite side of the neck to that on which the reins are being pressed must necessarily be very slack, otherwise a similar pressure will be brought to bear on both sides of the mouth at the same time, and as a sequence the pony will not turn at all.

Care must be taken when bringing ponies into work not to girth-gall them. A little salt and water or alum and water should be used on the parts as often as possible.

From the moment of the commencement of the "making" it is as well to put on the pony a keyed bit and running rein for a few hours daily, and to suspend an imitation polo stick and ball, or a couple of each, in the stall or box, in such a position that they must be constantly touched by the pony. The latter greatly assist in familiarizing the animal with them, although, in nearly every case, the teaching of the pony to take a stick is a simple matter, and easily accomplished if gone about in the proper manner. Sometimes it is only a matter of minutes.

When taking a polo stick for the first time, the rider should have it brought to him whilst he is on the pony, and before he accepts it the pony should be allowed to renew its acquaintance by having it put quietly to its nose. When the pony shows no fear, the stick should be taken near the *head* and the pony ridden about, first at a walk and then a gradually in-

creased pace as he becomes accustomed to its presence. In the meantime the stick must be changed alternately from one hand to the other, gently and smoothly, care being taken not to lead the pony to expect something he is to " fool " at, by catching hold of his mouth, or altering the pressure of the bit in the slightest degree.

When the pony is nervous, try to give it the idea that nothing unusual or extraordinary is in progress, and that it is not being called upon to do anything outside ordinary routine. Whistling quietly, or humming, has a really wonderful effect in soothing it, and also helps the rider to keep in a good temper—an absolutely essential factor in successful training. Directly the pony is used to the stick as described, the latter should be taken by the handle and swung gently close to the rider's foot with a pendulum-like motion, the swing being gradually lengthened until a complete circle is made. This should then be done on the near side, the stick being in the *left hand*. It thus leaves the hand holding the reins more free ; and as the stick cannot be used on this side with *quite* the same ease as with the right, there is less likelihood of making a mistake and thereby frightening the pony, which would mean extra trouble. Afterwards, an imaginary ball may be " dribbled " and struck at gently, from both sides, using the stick with the right hand only. The greatest possible care must be taken neither to hit the pony with the stick at this period of the training, nor to give it a shock in any way ; but, later on, when it has acquired thorough confidence, it will be necessary, before taking it into a practice game, to acquaint it with a somewhat rougher usage of the stick. In " dribbling " a ball on the near side, the right shoulder must be turned as much as possible over to the left, with the right arm across and well beyond that of the left, the ball being tapped away to the left rather than straight ahead.

When the stick can be used on the pony with sufficient freedom to obtain all the strokes at the walk, continue the practice at a trot and canter. A soft india rubber ball may now be called into requisition, and knocked gently about until the pony is used to it. There will be no noise, and should the ball strike the pony it will not hurt or frighten it. An old dark polo ball should then be utilized, and afterwards a white one.

The ground upon which the ball is knocked about should be as level as possible, that the ball may not be likely to bounce up and hit the pony, and that it may roll easily away. The pony gets the idea quicker

of following it. It is also as well to have several balls about, unless the rider be a sure hitter, or the constant returning after missed balls will tend to sicken the pony.

Lessons in

"Riding Off"

can now commence, and a "Schoolmaster"—that is, a pony who knows all about it—becomes necessary to carry this out easily and in the most satisfactory manner. The novice must be ridden alongside and against it, first at a walk, the novice's head being turned a little away so that the shoulder will be thrown in towards that of the other; at the same time the rider's outside leg must be pressed hard against the pony's side and slightly backwards. He must also incline his body well over, in the direction of or against the other rider, at the same time tapping the pony with the whip and "niggling" or kicking its side gently with his heel. This training must be carried out on *both* sides, and when the pony leans to the other *well* at a walk, it must be done at a trot and canter. If he is frequently allowed to get the best of the riding off, he will soon become efficient. Next put the novice between a *couple* of "schoolmasters" and accustom it to being squeezed and bumped, beginning gently and daily becoming rougher. The pony should also be made to either stand still, walk, trot or canter whilst the other two canter or gallop past on both sides—either from the front or from behind—and as closely to it as possible; also to approach and go between the others at all paces whilst the men who are on them are swinging their sticks. This training makes the pony bold in scrimmages—an extremely necessary qualification, but one in which a great many so-called polo ponies are decidedly deficient. Before taking the pony into the practice game, the polo stick should be laid on top of its quarters and pressed against its thighs, legs, etc., while going at all paces. As it becomes familiar with this treatment, the stick should be used a little more roughly, always taking care, however, that it is about the middle or even nearer the handle of the stick which comes into contact with the animal. The spring of the stick will thus prevent it from hurting the pony at all. The next step is the

Practice Game,

which should be *quiet* and only done at a canter. For the first few games there should not be more than three or four players, subsequently making

up the full number. After these games at home, the pony will be fit to be ridden quietly in club games and, if taken care of and only occasionally extended thoroughly during the first season, one may hope to have a "good polo pony" in the second.

It can be seen from the preceding crude outline that the "making" of a polo pony is no easy matter, and often, in spite of the greatest care, the more some ponies play, the more they "go off"; that is, develop an increasing dislike to the game, finishing up by swelling the ranks of hacks and harness ponies, to the serious loss of the owners in the majority of cases. Even if the pony does go on in the right way, there are but few which turn out to be real "tip toppers," so it will be readily understood that the few perfect ones are worth *all they make*.

The Polo Ground.

A full-sized ground is 300 yards long by 200 yards wide. Personally I like it 160 yards in width, as this tends to make better up-and-down play and less cross play. It should be as level and of as good old turf as possible, and the two sides bounded to the height of about 9 inches by boards of about $1\frac{1}{4}$ inches in thickness, and of almost any length; about 10 feet I think is the handiest, as such lengths are more easily obtained and stored, are handier to replace, and are more economical than greater lengths. The top edge should be rounded off and the boards kept firmly in position by being nailed to uprights 3 inches wide, 2 inches thick and 2 feet in length (bevelled on the outside at the top), driven into the ground to the necessary depth to bring the tops on a level with the boards, and placed about 5 feet apart. The turf should be raised about 3 inches up the boards on the inside, as this prevents the ball from lodging against them, and so keeps it more playable. As soon as possible after play, if the ground be cut up, it should be *tramped* before being rolled; that is, each hole should be carefully filled in with turf with the *roots bottommost*. I lay stress on the last word because it is important, and because I have found it a most difficult thing to ensure the tramping being done properly; if it be done badly, it hopelessly spoils the ground, the roller not only failing to properly fill in the holes, but also, where the pieces of turf rest on the edges of them, producing a *bump*, as well as leaving the hole unfilled. All the pieces which have been cut out must be put carefully into the holes and pressed with the foot, and to make the

tramping a thorough success the men should carry arm-baskets containing small pieces of turf to assist in the patching, should there not be sufficient of the cut-out pieces in the immediate vicinity. Of course a number of men are needed for this purpose, and in the case of a ground which is played on, say, five days a week, at least twenty, or even better, thirty to thirty-five men are needed to tramp it thoroughly *after play* to prepare it for rolling next morning, for play on that day. During wet weather the tramping can be left until the next morning, and, in fact, had at all times better be post-poned until then, rather than that it should be done *indifferently*, However, even if only a portion of the ground can be done properly, I prefer it to be tramped immediately after play. Grounds which become much cracked should be dressed thoroughly with sand at the end of every season, and, when tramping or patching, sand should be used in such cases in addition to turf.

Goal Posts may be constructed either of linoleum, cardboard, a material the substance of which I do not know (procurable from a paper-manufacturer at Willesden), or of *cane*, as mentioned in a work upon Polo by Mr. Miller. I have tried the cane posts and find them the most satisfactory, especially for exposed grounds. They should be made *entirely* of *cane*, as *stout* as possible. Being light they are easily kept "in position," or carried to and from the ground. It is only necessary to cover them with canvas (sail-cloth), which is usually painted with the club colours. If any *willow* is used in their con-struction, they will easily break, but if entirely cane, I think they will outlast those made of any other suitable material. For exposed grounds they should be about 10 feet in height, about 10 inches in diameter at the base, and 6 inches at the top, not including the edges, which should be thoroughly strong at both ends. According to two quotations I have received, this size can be bought, inclusive of canvas, for about £1 each post. For other grounds the general height is 12 feet. A disc of wood, with a hole about 1½ inches or 2 inches in diameter in the centre of it, should be plaited in the base and another at the top. Through the whole length of the goal post a round rod should be put, which should be of sufficient length to go into the ground to keep it upright, and leave about 3 feet at the top on which to affix a small flag of say 18 inches by 12 inches. Two goal posts are placed at each end of the ground *on the back line*, 8 yards apart, that is, 4 yards on either side of the centre of it.

The back line is the one drawn across the width of the ground at the extremity of *each* end of it, in line with the goal posts. The section of the line *between the posts* is the *goal line*, from *behind* which the ball has to be hit in the case of penalty No. 3.

The 30-*yard line* is drawn in front of and parallel to each back line, and 30 yards from it. The attacking side cannot place themselves nearer to the goal than this line when the ball is being hit from the back line or goal line.

The centre line is drawn across the width of the ground, dividing it into halves. This is optional; marks on the inside of the boards are sufficient.

The eight players—four a side—who take the numbers 1, 2, 3 and 4 (or back) arrange themselves on either side of the centre line and in the centre of it: No. 1 (standing nearest the person throwing in) facing the opposing No. 1; No. 2, about 3 or 4 yards from him and in the *centre* of the ground, facing the opposing No. 2; No. 3, again, about 3 or 4 yards from No. 2, facing the opposing No. 3; with the "backs," or No. 4s, standing behind their respective *confrères* (about in line with their No. 2) and about 10 or 15 yards nearer the goal.

The ground is marked out for the game, and the positions of the players are as indicated in the subjoined diagram :—

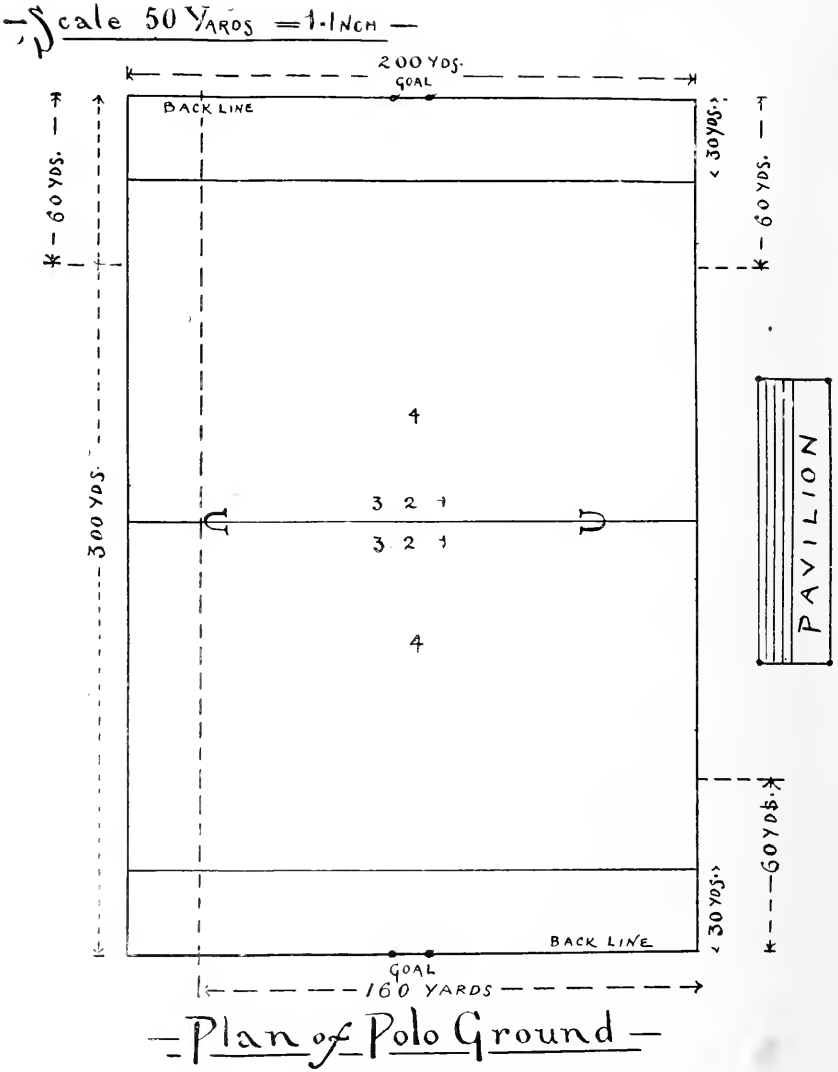

PLATE I.—A PLAN GIVING DIMENSIONS OF A POLO GROUND.

One mark only on the inside of the boards on both sides, and ends of the ground, at sixty yards from the back lines, in the position of the *dotted* line here shown, is necessary, owing to the alterations in the penalties which have been made by the Hurlingham Committee.

THE HURLINGHAM RULES AND REGULATIONS

Height. 1.—The height of ponies shall not exceed 14 hands 2 inches, and no pony shall be played either in practice games or matches, unless it has been registered in accordance with the Rules of Measurement. Penalty 9.

Unsafe Pony. Penalty 10. 2.—No pony showing vice or not under proper control shall be allowed in the game.

Ground. 3.—The goals to be not less than 250 yards apart, and each goal to be 8 yards wide.

A full-sized ground should not exceed 300 yards in length by 200 yards in width, if unboarded; and 300 yards in length and 160 yards in width, if boarded.

Size and Weight of Balls. 4.—The size of the balls shall not exceed $3\frac{1}{4}$ inches in diameter, and the weight of the ball shall not exceed $5\frac{1}{2}$ oz.

Umpire. 5.—Each side shall nominate an umpire, unless it be mutually agreed to play with one instead of two; and his or their decisions shall be final. Referee. In important matches, in addition to the umpires, a referee may be appointed, whose decision in the event of the umpires disagreeing shall be final.

Whistle. Umpire. Referee. 6.—The umpire shall carry a whistle, which he shall use as required. If the umpire blows his whistle the ball is dead, but if the other umpire disagrees a referee shall be called in, who, after consulting both umpires and taking any necessary evidence, shall decide on the course to be pursued.

Timekeeper and Scorer. 7.—An official time-keeper and scorer shall be employed in all games and matches.

Number of players. 8.—The number of players contending is limited to four a side in all games and matches.

How game commences. 9.—The game commences by both sides taking up their position in the middle of the ground, and the umpire throwing the ball into the centre of the ground between the opposing ranks of players.

Duration of play. 10.—The duration of play in a match shall be one hour, divided into six periods of ten minutes each, with an interval of three minutes after each period, except the third (half time), when the interval shall be five minutes.

Excess time. The five first periods of play shall terminate as soon as the ball goes out of play after the expiration of the prescribed time, any excess of time in any of these periods, due to the ball remaining in play, being deducted from the succeeding period.

Last period. The last period shall terminate, although the ball is still in play, at the first stroke of the final bell, wherever the ball may be.

Exception. In case of a tie the last period shall be prolonged till the ball goes out of play, and if still a tie, after an interval of five minutes, the ball shall be started from where it went out of play and the game continued in periods of ten minutes, with the usual intervals, until one side obtain a goal, which shall determine the match.

Bell.

11.—The bell shall be rung to signify to the players that the ten minutes have expired, and it shall be rung again when the ball next goes out of play, to indicate the time for changing ponies.

Changing Ponies.

12.—With the exception of the intervals allowed in Rule 10, play shall be continuous, any change of ponies, except according to the above provision, shall be at the risk of the player.

Ball hit behind by attacking side. Penalty 5.

13.—If the ball be hit behind the back line by one of the opposite side, it shall be hit off without delay from where it crossed the line, but at least 12 feet from the goal post, after giving the opposing side reasonable time to get to the 30 yards line. None of the attacking side shall be within 30 yards of the back line when the ball is hit off.

Unnecessary delay. Penalty 6.

N.B.—There must be no unnecessary delay.

Ball hit behind by defending side. Penalty 4.

14.—If the ball be hit behind the back line by one of the defending side penalty 4 shall be exacted, provided the ball does not glance off another player or another pony.

Ball thrown in by Umpire. No delay allowed.

15.—When the ball is hit out, it must be thrown into the ground by the umpire from the exact spot where it went out, in a direction parallel to the two goal lines, and between the opposing ranks of players. There must be no delay whatsoever on any consideration for absent players.

Ball out.

16.—The ball must go over and clear of the boundary line to be out.

Goals. Over top of goal posts.

17.—A goal is gained when a ball passes between the goal posts and over the goal line. If a ball is hit above the top of the goal posts, but in the opinion of the umpire, between those posts produced, it shall be deemed a goal.

To win game.

18.—The side that makes most goals wins the game.

Ends changed.

19.—Ends shall be changed after every goal, or if no goal has been obtained, after the 3rd period.

Riding out an antagonist. Penalty 1. Crossing.

20.—A player may ride out an antagonist, or interpose his pony before his antagonist, so as to prevent the latter reaching the ball, but he may not cross another player in possession of the ball, except at such a distance that the said player shall not be compelled to check his pony to avoid a collision.

Definition of crossing. Penalty 1.

If two players are riding from different directions to hit the ball, and a collision appears probable, then the player in possession of the ball (that is, who last hit the ball, or if neither have hit the ball, the player who is coming from the direction from which the ball was last hit) must be given way to.

Exact line of the ball.

(i.) Any player who follows the exact line of the ball from the direction from which it has been last hit, is in possession of the ball rather than any player coming from any other direction.

Last striker.

The last striker is in possession provided that no other player can, without causing the striker to check his pony to avoid a collision, get on the line of the ball in front of him. Under these circumstances the last striker may not ride into the adversary from behind, but must if necessary take the ball on the near side of his own pony.

Last striker.

No player shall be deemed to be in possession of the ball by reason of his being the last striker if he shall have deviated from pursuing the exact course of the ball.

Riding to meet the ball.

(ii.) Any player who rides to meet the ball on the exact line of its course is in possession rather than any other player riding at an angle from any direction.

Riding at an angle.

(iii.) Any player riding from the direction from which the ball has last been hit, at an angle to its course, has possession rather than any player riding at an angle in the opposite direction.

Riding in same direction.

(iv.) If two players are riding from the same direction, that player is in possession whose course is at the smallest angle to the line of the ball.

(v.) If two players are riding from opposite directions to hit the ball, one of these being a left-handed player, the latter must give way. Left-handed players.

N.B.—The line of the ball is the line of its course or that line produced at the moment any question arises. The line of the ball.

21.—No player shall ride dangerously. Dangerous riding. Penalty 1.

22.—No player shall use his stick dangerously. Dangerous use of stick. Penalty 1.

23.—In the case of a player being disabled by a foul, penalty 8 may be exacted by the side that has been fouled, and penalty 1 shall be exacted in any case. Penalties 1 and 8.

24.—No player shall seize with the hand, strike, or push with the head, hand, arm or elbow, but a player may push with his arm, above the elbow, provided the elbow be kept close to his side. Rough play. Penalty 1 or 2 or 3.

N.B.—Penalty 1 shall only be exacted if the umpire considers the play dangerous. Dangerous rough play.

25.—No player shall crook an adversary's stick, unless he is on the same side of an adversary's pony as the ball, or in a direct line behind, and his stick is neither over or under the body or across the legs of an adversary's pony. The stick may not be crooked unless an adversary is in the act of striking at the ball. Crooking sticks. Penalty 2 or 3.

When two players are riding abreast no player shall strike at the ball over or under the body or across the legs of an adversary's pony. A player who deliberately rides his pony up to an adversary who is in possession of and striking at the ball, or who deliberately rides his pony over the ball to prevent an adversary striking at it, does so at his own risk. Striking across an adversary's pony.

26.—No player who is off side shall hit the ball, or shall in any way prevent the opposite side from reaching or hitting the ball. Off side. Penalty 2 or 3.

A player is off side when at the time of the ball being hit he has no one of the opposite side nearer the adversaries' goal line, or that line produced, or behind that line, and he is neither in possession of the ball nor behind one of his own side who is in possession of the ball. The goal line means the eight yard line between the goal posts. A player, if off side, remains off side, until the ball is hit or hit at again. Definition of off side.

27.—A player may not carry the ball. In the event of the ball lodging upon or against a player or pony, it must be immediately dropped on the ground. Carrying ball. Penalty 2 or 3.

28.—No player shall intentionally strike his pony with the head of his polo stick. Striking pony with head of polo stick. Penalty 2 or 3.

29.—Should a player's stick be broken, he must borrow one from one of his own side, or ride to the place where sticks are kept and take one. In the event of a stick being dropped, he must either pick it up himself, borrow one from one of his own side, or ride to the place where sticks are kept and take one. On no account may a stick be brought on to the ground. Broken sticks. Dropped stick. Penalty 2 or 3.

30.—No dismounted player is allowed to hit the ball or interfere in the game. Dismounted player. Penalty 2 or 3.

31.—If the ball be damaged, the umpire shall, at his discretion, stop the game, and throw in a new ball at the place where it was broken, towards the nearest side of the ground, in a direction parallel to the two goal lines and between the opposing ranks of players. Throwing in ball.

Absent player.

N.B.—It is desirable that the game shall be stopped and the ball changed when the damaged ball is in such a position that neither side is favoured thereby.

32.—If a player leaves the game in order to change a pony, or to get a fresh stick, or for any other purpose, the penalty for off side cannot be exacted against the opposing side until the return of the player into the game.

Ground kept clear.

33.—No person allowed within the arena—players, umpires, referee and manager excepted.

Accidents.

34.—(*a*) If a player or a pony be injured by a fall or any other accident, the umpire shall stop the game, and allow time for the injured man or pony to be replaced.

(*b*) If a player or a pony falls through that player or that pony's fault, the umpire shall not stop the game, unless he is satisfied that the player or pony is hurt.

Where ball thrown in.

N.B.—On play being resumed, the ball shall be thrown in, where it was, when the game was stopped, and in the manner provided for in Rule 15.

Spurs and Blinkers.

35.—No blinkers, or spurs with rowels are allowed; no pony blind of an eye is allowed to play.

Foul at end of Match.

36.—In the case of a foul occurring at the end of a match, and there not being time to exact the penalty before the final bell rings "one minute extra shall be allowed" from the time the ball is hit or hit at in carrying out the penalty.

Substitutes in Tournaments.

37.—In tournaments if a player having taken part in the tournament for any reason be unable to play, he may, with the consent of the Committee of the Club where the tournament is held, be replaced by any player who by the Rules of the tournament is qualified, provided the said player has not already competed in another team.

Disregard of Umpire. Penalty 7.

38.—The decision and injunctions of the umpire must not be disregarded or questioned.

Incidents not provided for.

39.—Should any incident or question not provided for in these Rules arise, such incident or question shall be decided by the umpire or umpires. If the umpires disagree, a referee shall be called in, whose decision shall be final.

PENALTIES

Crossing, see Rule 20. Dangerous play, see Rule 21 and 22. Disabled by a foul, see Rule 23. Striking an adversary, see Rule 24.

Penalty 1.—A free "hit at" the ball from a spot 60 yards from the goal line of the side fouling, opposite the centre of goal, or if preferred from where the foul occurred; all the side fouling to be behind their backs line until the ball is hit or hit at, but not between the goal posts, nor when the ball is brought into play may any of the side ride out from between the goal posts. None of the side fouled to be nearer the goal line produced than the ball is, at the moment it is hit or hit at.

Crooking sticks unfairly, see Rule 24.
Off side, see Rule 25.
Rough play, see Rule 26.
Carrying ball, see Rule 27.
Striking pony with polo stick, see Rule 28.
Broken or dropped stick, see Rule 29.
Dismounted player, see Rule 30.

Penalty 2.—A free "hit at" the ball from where it was when the foul took place, none of the side fouling to be within 20 yards of the ball. The side fouled being free to place themselves where they choose.

Penalty 3.—The side fouling take the ball back and hit it off from behind their own goal line between the posts, none of the side fouled to be within 30 yards of the goal line produced, the side fouling being free to place themselves where they choose.

Hit behind by defending side, see Rule 14.

Penalty 4.—A free "hit at" the ball, from a spot opposite where the ball was hit behind and 60 yards distant from the "goal line produced," none of the side fouling to be within 20 yards of the ball. The side fouled being free to place themselves where they choose.

Second free hit, see Rule 13.
See penalties 1, 2, 3 and 4.

Penalty 5.—At the umpire's discretion a second free hit in the case of Rule 13 and penalty 3 being infringed, and in cases when penalties 1, 2 and 4 are infringed a second free "hit at" the ball.

Unnecessary delay in hitting out, see Rule 13.

Penalty 6.—In the event of unnecessary delay in hitting out the ball, the umpire shall call on the offending side to hit out at once; if the umpire's request is not complied with he shall bowl in the ball underhand, at the spot where the ball crossed the back line at right angles to the goal line or "goal line produced" as hard as possible. In this case the penalty for an off side shall not be claimed against the attacking side should no one of the defending side be between them and the goal line produced, or behind that line.

Disregarding Umpire, see Rule 38.

Penalty 7.—The offender warned off the ground for remainder of match, no substitute allowed to take his place.

Player disabled by a foul, see Rule 23.

Penalty 8.—Designation of any of the players on the side fouling, who shall retire from the game. The game shall be continued with three players a side, and if the side fouling refuse to continue the game, it shall thereby lose the match.

Unmeasured ponies, see Rule 1.

Penalty 9.—Disqualification of team offending.

Pony ordered off, see Rule 2.

Penalty 10.—The pony ordered off the ground.

THE GAME

THE GAME, although essentially one of combination, allots to each player his particular duties, in the discharge of which, however, he must show no jealousy whatever. He must at all times do those things only which tend to the ultimate winning of the game, and, however brilliant he may be in some particular feature of the game, he must resolutely subordinate his desire for individual distinction and practice rigid self-denial, if by so doing he best serves the interests of his side.

A Concise Description of the Duties of the Players.—The place of No. 1 in matches is given to one most suitable for the position; in club games it is generally given to the least experienced player; and he is the one who is occasionally told off to stick to "back" and never mind the ball. This, combined in some cases with the harsh treatment he receives from both the "back" and his own side in attempting to carry out his duties, discourages him, gives him an immediate dislike for the position, and very soon he expresses his desire, as I have had it said to me, "to play a little of No. 2." The expressions from his side: "Get to your back!" "Ride the man! d——n it leave the ball! crook his stick!" etc., etc., and those of the opposing "back": "Where the d——l are you coming to?" "Off side!" "Foul!" etc., etc., are too much for him, especially in the beginning. He argues: why should not he hit the ball? He *should*, if capable of doing so, and it would be to the advantage of his side. The reason he is told not to mind the ball is, I think, that some young players exhibit an irresistible desire to "swipe" at it upon every possible opportunity, quite regardless as to whether it is in the possession of their own side or not. In the former case, where it might require only another shot to hit a goal, to have it either hit away or to be prevented from getting to it by No. 1 being in the way, is of course very annoying to his *confrères*. Personally, I like the position; and when No. 1 knows a little of the game there is nothing like the amount of drudgery in it, nor is it the apparently hopeless task for him to

keep near back that it may at first appear. Moreover, when he can hit the ball *with direction*, less of "Leave the ball!" etc., will be heard, and he will be accorded plenty of opportunities of hitting goals. Again, instead of "riding in 'back's' pocket" the *whole time*, doing ten times more work than there is any reason for, No. 1 will only go to him when it is necessary, and so will escape the "rating" from him.

If No. 1 keeps "on side" (that is, having an opponent between himself and his opponent's goal at the time of the ball being struck) by as short a distance as possible and devotes himself principally to watching the ball, anticipating its direction, he will find "back" coming after him instead of being obliged to gallop (more often ineffectually than otherwise) after "back." He should keep an eye on "back," but only give him *part* of his attention; otherwise "back" will always get more or less of a start, No. 1 having to wait until "back" has commenced to do something before being able to start himself. By watching the ball and going in the direction he anticipates it will go, he will generally find that "back" is travelling there also, and the latter will only have the advantage of the distance by which No. 1 was "on side." In this way No. 1 often gets to the ball as soon as or possibly before "back," and can either take it on or ride "back" off.

If No. 1 goes after "back" to ride him off he should do so by taking short cuts, not as I have frequently seen, gallop about after him in his tracks apparently imbued solely with the desire to be *near* him, or, having started a bit late after him, gallop furiously as if with the intention of sending him to "Kingdom Come," and then do nothing when he *has* reached him, except perhaps make a feeble attempt to *foully crook* his stick.

When No. 1 is riding off "back," and *both are locked* together, he can, as a final effort, if he finds he is getting the worst of it, snatch his pony away from that of "back," just as the latter is taking his stroke, or about to do so. "Back's" pony, suddenly losing its support, will thus be apt to lurch sufficiently to make "back" miss; or No. 1 can try leaving "back" before the latter has got to the ball and, when he is about to strike, ride into him again. If No. 1 goes up to "back" on the same side of him as the ball is, he should not ride close up under "back's" stick as back is about to strike, although this is even less dangerous than No. 1 having the head of his pony in about a line with the flanks of "back's" pony. In the former case his head, or that of his pony, may only have an ugly crack with the

handle of " back's " stick; but in the latter case he will not only more than probably get the ball, or the head of " back's " stick in his face, but stands a good chance of having his pony cut down by a blow on its legs. Anyway, it is an extremely dangerous practice to try and ride " back " off from the same side as the ball is, and should not be attempted. It is very much better in every way to ride well to the side of " back " and crook his stick, or ride him off from the opposite side to which the ball is. When No. 1 can play the game he will find that he has no more work to do than any other player of his side, that he will get the same amount of kudos as the rest, and that it is possible to display as much brilliancy in that position as in any other.

When Penalty 1 is given against the side of No. 1, he stands with his *confrères* on the back line, ready, instantly the ball is hit at, or hit, to go " back " and intercept the ball *en route* if he can. In the case of Penalties 2 and 4 given against his side, No. 1 stands facing " back," at twenty yards from and in a direct line with him, ready to stop the ball or instantly get to it and either take it on or ride " back " off if " back " makes a mistake. In the case of Penalty 3 against his side, No. 1 stands in front of and close up to " back " and prevents him getting to the ball.

With regard to penalties *against opponents*, when Penalty 1 is given, No. 1 stands with his *confrères* at the 60-yard line, ready the instant the ball is " hit at " or hit, to gallop the shortest way to it, to prevent " back," or in fact any opponent, stopping it; or, should it have been stopped, to put it through the goal, if he has a chance of doing so.

In the case of Penalty 2, No. 1 places himself in front of " back " and prevents him touching the ball.

In Penalty 3, No. 1 stands on 30-yard line facing " back," and if possible stops the ball and puts it through goal, or goes to " back " and rides him off. Should the opposing No. 3 hit out, No. 2 will look after him, whilst No. 1, standing in the position as before, watches " back," who will be in front of goal.

In Penalty 4, No. 1 does exactly as in Penalty 2.

To commence the game, the ball is thrown in to the centre from the pavilion side, and No. 1, as I have said before, stands nearest the person throwing in. If the ball be thrown in on his left, he should either crook the stick of the opposing No. 1 and go straight to " back," or he can try to take it by a near-side stroke and, if successful, go on with it and hit a goal; if

he fails to hit the ball, he must immediately get to the opposing "back." If the ball be thrown into his right, he must act in a similar way, but he will have a better chance of hitting it.

To sum up, No. 1 must keep "on side," prevent the opposing "back" from touching the ball: when his own No. 2 cannot get to the ball he must slip the "back" and take it on himself. No 1 or any other of his team may be put on side by being passed by one of his own side in possession of the ball.

No. 2.—Why this should be a much-coveted position I do not know. Perhaps it is because it is thought by some that his duty is to hang about waiting for the ball to come to him, that he is to be always served with it by the rest of his side, that he is to do no "riding off" or any work beyond getting to the ball as often as possible, and, whether he can do most good with it or not, that he is to stick to it even to the extent of taking it all round the ground to retain possession. Far from all this, although No. 2 leaves himself sufficiently free to take on the ball the instant it would be his duty, he should take his share of riding off, etc., when it would be to the benefit of his side for him to do so; and although the ball should be served to him when he is "loose" or can do the best with it, the others of his side should keep it, or pass it to another, if the game would be best served thereby. If No. 2 finds he cannot retain possession he should immediately call to his No. 1 to take the ball, or pass it to him if that player happens to be free, or to any one of his side who could make good use of it. Far from having an easy time, *his* should be the hardest place of his side.

Perhaps it is the glamour of the qualities which are necessary in a good No. 2 which makes some who are unsuitable wish to play in that position. I am referring principally to players in ordinary members' games. In matches the players are, of course, allotted to those positions for which they are best suited individually.

No. 2 should be always on the *qui vive*, a brilliant and sure hitter at any pace, a real good shot at goal, and ride the fastest and handiest ponies possible. In fact, all players should ride the fastest and handiest ponies procurable, consistent with the temperament of the pony being adapted to the requirements of the particular position to be filled. In his position as No. 2, pace being especially necessary, he must be able, when actually *racing*, to hit *surely*, by no means so simple a matter as when going slowly; and *big* hitting is absolutely useless if without direction. Runs, however dashing

and brilliant up to a certain point, are of no avail if they finish up by the ball being hit outside the posts instead of between them.

The particular adversary of No. 2 is the opposing No. 3, but, acting principally on the offensive, he will find that No. 3 will come to him oftener than it will be necessary for him to go to No. 3.

When the opposing No. 3 takes the place of "back," No. 2 continues to act against him, while No. 1 still devotes his attention to "back." No matter from what position the ball be thrown in, No. 2 always stands between his No. 1 and No. 3, and when the game commences, if he (No. 2) does not take the ball himself he should prevent the opposing No. 2 from getting it, by crooking his stick. He should at all times be careful not to hit the ball to the opposing "back.'

No. 3, who should be able to hit back-handers well, acts principally on the defensive, keeping the ball up to his own No. 2, and assisting his "back" by keeping No. 2—his own particular adversary—clear of him. "Back" then only has to contend with No. 1. He should watch "back" carefully for any hint as to the direction in which he intends to send the ball, and grasp his intentions, if possible, before the opposing No. 2 does; so he may thus be able to slip him, get to the ball, and if his No. 2 is free, hit it up to him. If his No. 2 is not free, he should take it on himself and do the best he can with it. Immediately he loses possession he should return to his proper place. Generally, No. 3 hits out, if he can do so, as well or nearly as well as "back," as he can go on with the ball if necessary, leaving "back" to look after his goal. The position of No. 3 is not of less importance than that of No. 2 or any other of his side, considering that he has to keep the vivacious No. 2 in check; but to the *uninitiated* he will not show to quite the same advantage, because of being more "in the middle" of the game. He does not get so many opportunities for noticeable individual brilliance as No. 2, as he is principally occupied in putting the ball up to his "forwards" and assisting the "back." He should not, however, try to do the work of "back" as well as his own by returning after balls which he should leave "back" to take. Being behind No. 2 he is able to coach him if necessary, informing him when he has plenty of time to take a stroke, etc. When the ball is thrown in, No. 3 stands farthest away; he first prevents the opposing No. 3 from getting the ball, then goes to the No. 2. In backing up his No. 2, he rides a sufficient distance from that player to be easily able

to stop, turn back, get to the ball before the opposing No. 2 can do so, and hit it up to his own No. 2, in the event of it being returned and of his "back" being unable to get to it.

No. 4 or "BACK," being the last defence, always remains nearest to goal. He should be particularly good at "back-handers" and is often the most experienced player of his side, perhaps particularly adapted for the position by his coolness and steadiness under all circumstances. These qualities enable him to grasp instantly every turn of the game, and so to direct his side to the greatest advantage. Or, perhaps, he may be one who, although a fine player, prefers a position which involves a little less bustling about than the others. "Back," as a rule, has a somewhat easier time in regard to galloping than the others, but on the other hand he has the most responsible position, and if he has an enthusiastic, inexperienced No. 1 clinging to him nearly the whole time, he also has a most trying and annoying one. The position, *in club games*, is sometimes held by those who, for some reason or another, may be troubled with the "slows"; this is the best place for them, as they are more out of the way of the others. In the other positions they often constitute a great source of danger to themselves and to the others players, although they appear to be sublimely oblivious of the fact, and invariably insist upon being *well up* in the game. The inexperienced No. 1 does not interfere to any great extent with the actual play of a good "back," because the latter has so many different ways of putting him *hors de combat* at the critical moment. For instance, No. 1 may be standing close up to him and, just as the ball is about to be struck, "back" will dart forward and put him "off side"; or, again, "back" will feign to go one way, and the instant No. 1 is on the move, he will dart in the opposite direction, or when the ball is coming in his ("back's") direction, should No. 1 be alongside of him, he may *dash back*, that is if the ball has not been hit where No. 1 could get to it, and then as the ball is again about to be struck *stop short*; No. 1, not expecting the move, goes on a little farther and is once more "off side," "back" immediately going on again. Moreover, such a No. 1 would have very little chance of getting the best of a "riding off" bout, and he may also commit the fault (for which there is a penalty now) that many others do, of holding his stick out to crook that of "back" some time before the latter has got to the ball, the result being that "back" simply "times" himself, and, knocking the stick away (sometimes clean out of the hand of No. 1), takes the ball.

Although these manœuvres would fail against an experienced No. 1, I think "back" would prefer to have him as an opponent rather than the other. A simple rule which is carried out by "back" is to keep in such a position during the game that he can get to the ball *first* when it is coming towards him, after it has passed his No. 3; that is, he watches it carefully and always places himself in a direct line with the ball and his goal.

PLATE 2.—OFF-SIDE FORWARD STROKE.
PREPARING TO STRIKE.

PLATE 3.—OFF-SIDE FORWARD STROKE.
COMPLETING THE STROKE.

The reader will observe the slightly altered position of the ball as the stroke is being completed.

PLATE 4.—HITTING OUT TO AN ANGLE OF 45°.

Note.—Owing to a slight movement of the pony during photographing, the ball appears a little too forward. The pony's head is also turned somewhat in the wrong direction.

PLATE 5.—OFF-SIDE BACKHANDER.
PREPARING TO STRIKE.

PLATE 6.—OFF-SIDE BACKHANDER. THE STICK IN ACTUAL CONTACT WITH THE BALL.

PLATE 7.—HITTING UNDER THE TAIL FROM RIGHT TO LEFT.

PLATE 8.—HITTING UNDER THE NECK FROM RIGHT TO LEFT. PREPARING TO STRIKE.

PLATE 9.—HITTING UNDER THE NECK FROM RIGHT TO LEFT. STICK IN ACTUAL CONTACT WITH THE BALL.

A SHORT DESCRIPTION OF THE DIFFERENT STROKES USED IN POLO, AND HOW TO MAKE THEM

AS a preliminary, I may say that to be a *sure hitter* a lot of practice is necessary, and if one really becomes such, he should think himself fortunate, a peculiarity in many cases being that one day a man can hardly *miss* a ball and on another can hardly *hit* one.

To describe the strokes in some sort of order we will say that—

The first one is the OFF SIDE FORWARD (see Plates 2 and 3).—When the player approaches the ball, the stick should be held up perpendicularly from the elbow, which must be held horizontally from the shoulder, and when he is about to take the stroke it should be raised as high as possible. It should have described a little more than half a circle by the time it strikes the ball, which must be about twelve inches to the front of the rider's foot, and sufficiently to the side for the stick to well clear the foot, finishing, after having completed a little more than three-quarters of a circle, in the direction in which the ball is intended to be sent.

The stick should always be firmly grasped just as the head of it is about to touch the ball, as if the *centre* of its head does not strike the ball, the stick will twist in the hand and the ball will go anywhere *but* in the intended direction. From the perpendicular (while the quarter of the circle to the back is being made, the rider turns well to the right in the saddle, and takes a good grip with the left leg) the arm is thrown out behind to the greatest possible extent to increase the distance from the ball and thus gain greater impetus for the impact. A short, choppy hit, with the ball under, or behind, the rider's foot, is of no use whatever. It is not so much strength that is needed to make a big hit, as a long, deliberate, and sweeping stroke right from the shoulder, the body and shoulder moving forward simultaneously with the arm as the ball is struck.

The pony's head should be turned slightly to the left.

The second, HITTING OUT TO AN ANGLE OF SAY 45 DEGREES TO THE RIGHT.—In making the stroke it is necessary that the ball should be as far away laterally from the player as possible, consistent with his being able to reach it fairly easily, and about midway between his foot and the pony's hind legs. The exact position of the ball would depend upon the acuteness of the angle ; the more acute the angle, the farther back the ball must be. The rider must turn more to the right than is necessary for a forward stroke, sit down well in his saddle, and lean slightly back. He should slightly turn the pony's head in the direction in which he is hitting, thus inclining the pony's quarters away from the stick. Preparatory to striking the ball, the stick should be raised as before ; in fact, the preliminary position of the stick is practically the same for all strokes, the difference being that it must be held a little more forward for hitting to the back, and a little more to the back when hitting forward. Of course it must be held over to the left of the pony when hitting on that side. This stroke may be converted into a simple straightforward shot by turning the pony completely in the direction in which it is wished to send the ball (see Plate 4).

The third, OFF SIDE BACK-HANDER.—The stick should be raised high, but more directly over and to the front of the rider than when making the forward stroke. In grasping it, the thumb should be well down the back of the handle. Preparatory to hitting, the body should be turned slightly to the left, and the right shoulder brought forward ; then, as the stroke is made, the body must be turned to the right, the left shoulder going forward and the right coming back.

A little more force must be put into this stroke than is necessary for the strokes already described, the swing of the stick alone being hardly sufficient. A good grip must be taken with *both* legs, but a little stronger with the left. The pony's head should be straight, the ball well clear of the rider's foot, and about twelve inches behind it (see Plates 5 and 6).

The fourth, HITTING UNDER THE TAIL.—In making this stroke from *right* to *left*, the ball must be as far back as possible, or rather, its position must again depend upon the direction in which it is desired that it should travel. To hit it *straight* across the course of the pony, it must be clear of the latter's hind legs. To hit it at a less acute angle, it would have to be more forward. By seating one's self on a pony and practising strokes at the various angles to which the ball can be sent, it is possible to learn in a few

PLATE 10.—HITTING UNDER THE BODY FROM RIGHT TO LEFT.

PLATE 11.—HITTING UNDER THE BODY FROM LEFT TO RIGHT.

PLATE 12.—NEAR-SIDE FORWARD STROKE.

PLATE 13.—HITTING UNDER NECK FROM LEFT TO RIGHT.

minutes the necessary positions the ball must occupy to render the stroke easy and effective. The rider must take a long hold of the reins, lean well over and back, and turn his body to the right as much as possible. The pony's head should be turned slightly to the right (see Plate 7).

The fifth, HITTING UNDER THE NECK, FROM RIGHT TO LEFT.—It is necessary to lean well forward and strike at the ball when it is *well in front* of the pony, about perpendicularly under its nose. The precise moment at which to strike must depend upon the pace at which the rider is going. The arm and stick will probably hit the pony's neck—the arm on the side of the neck and the stick underneath—but the part of the stick which comes into contact with the pony will be so near the hand that the spring will render the blow quite harmless. It requires a certain amount of "knack" to make the stroke properly, especially if a "whippy" stick be used, otherwise the rider may receive a nasty blow on his own head from the head of the stick, owing to the bending of the stick under the neck caused by the force used, so totally unexpected that, on his first experience of it, he will wonder where it came from, and may, for a moment, attribute it to one of the other players. For the execution of this stroke a rather short hold of the reins should be taken, and the pony's head should be kept straight (see Plates 8 and 9).

The sixth, HITTING UNDER THE BODY FROM RIGHT TO LEFT.—Although this is not at all a stroke to be generally recommended—and is, in fact, considered to constitute bad play if frequently resorted to when the ball could be taken in another way—it is a necessary one sometimes, for instance, when *standing* in front of goal, with no time to change position, or for the purpose of passing the ball. It should not be used when in motion, or the probable result, if the player be an inferior one, will be the laming of the pony. To make the stroke with the *least* chance of striking the pony's legs, it is of course necessary to hit the ball when it is midway between the fore and hind legs, and, in making it, the rider's foot should be moved forward, and the arm drawn up somewhat in order that the stick may swing clear of the ground. The part of the stick near the handle should be the only portion to touch the pony, and the pony should only be touched just at the back of the rider's leg (see Plates 10 and 11).

The seventh, NEAR SIDE FORWARD.—This stroke, in contradistinction to the last, is very useful, although difficult to execute well. It is especially useful, for example, when being "ridden off" on the stick-hand,

or when placing the ball for hitting on the right. To make it properly, that is, without drawing the ball under the pony's neck or striking its fore legs with the stick, the rider must lean well over and turn his body as much as possible to the left, his right elbow being outside and clear of his left arm. He should take a good grip with the right leg. The pony's head may be turned a little to the right, and a fairly long rein is necessary. In describing the circle to the back the stick must almost touch the quarters, the player attempting to cut the ball *away to the left*; otherwise, until the stroke can be done properly and the ball sent in the desired direction, it is nearly certain to go under the neck and be given to the man who may be "riding off." The ball should be in the same position on the ground as for the off side forward stroke, except that it will be on the *left* (see Plate 12).

The eighth, HITTING UNDER THE NECK FROM LEFT TO RIGHT.—This stroke needs describing no further than to say that the position of the rider and the stick are practically the same as for the *near side forward* stroke and that of the ball the same as for the *under neck stroke* from *right to left*, except that it is on the *left* instead of the right (see Plate 13).

The ninth, NEAR SIDE BACK-HANDER.—The rider must turn well and lean to the left. The stick must be raised perpendicularly to the left, of the pony as high as possible and *forward*, but the ball must be about a foot *behind* his leg, instead of to the front, as in the case of the near side forward stroke. A fairly long rein is necessary, and the pony's head should be kept straight (see Plates 14 and 15).

The tenth, HITTING BEHIND AND ACROSS THE PONY'S COURSE FROM LEFT TO RIGHT.—See hitting under the tail from right to left; the positions are exactly reversed (see Plates 16 and 17).

PLATE 14.—NEAR-SIDE BACK-HANDER. PREPARING TO STRIKE.

PLATE 15.—NEAR-SIDE BACK-HANDER. STICK IN ACTUAL CONTACT WITH BALL.

PLATE 16.—HITTING BEHIND AND ACROSS THE PONY'S COURSE FROM LEFT TO RIGHT. PREPARING TO STRIKE.

PLATE 17.—HITTING BEHIND AND ACROSS THE PONY'S COURSE FROM LEFT TO RIGHT. THE STICK IN ACTUAL CONTACT WITH THE BALL.

UMPIRING

IN order for this to be done efficiently it is almost essential, more especially in matches, that there be two umpires, each taking half the ground lengthwise. To better explain it, we will suppose the ground to be equally divided into four parts, marked A, B, C, D, (see Plate 19). The umpire on the pavilion side, if his men are hitting *down*, should ride principally in quarter B, the other umpire being in quarter C. If the men of the umpire on the pavilion side are hitting *up* he should principally ride in quarter D, the other riding in quarter A, each looking more particularly after the side for which he has been named. He should not, of course, favour them in the slightest ; he is not placed there in any partisan spirit, but simply to divide the work of umpiring, assist his brother-umpire to ensure the due observance of the rules by *all* the players.

To commence the game, the umpires take up positions on the centre line facing each other, the head of the pony of the one on the pavilion side about 10 or 15 yards from, and pointing between the heads of the two ponies of the No. 1's, the head of the other umpire's pony being the same distance from and pointing between those of the No. 3's (see Plate 82). To facilitate the explanation, we will call the umpire on the pavilion side of the ground the " first " and the other the " second." The players are lined up ready to commence, the " first " says " Ready ! Play ! " throwing in the ball between the two lines of players with sufficient force to send it a yard or two beyond the No. 3's, supposing none of them attempted to touch it. The umpires then take up the positions as explained and shown in Plate 83.

At the commencement of the game, and also after a goal is scored, the ball is always thrown in at the centre by the " first." Subsequently the duties of the two umpires are identical. Each throws in the ball over his *own* boards—when it has been hit over them—and each throws in *towards* the boards of the other in the event of the ball going out of play nearest to them. The ball is " out of play " when it is broken, " buried " or in case of injury to a player or pony.

The umpire should not delay the throwing in by waiting for absent

players, but having given those in the vicinity reasonable time to take up their proper places, should say " Play ! "—at the same time throwing in the ball.

Each notes where the ball goes out of play at his end or side of the ground, particularly at the finish of periods of play. The umpire's is a most trying position, as his attention must be concentrated upon the game the *whole time,* incidents following so quickly one upon the other.

In scrimmages in front of goal the umpire at that end looks out lest an " off-side " goal be hit, or for the ball glancing off the pony of a player. He watches No. 1 with regard to fouling " back," keeps the players up to time, and sees that no time is wasted after goals, during penalties, when the ball is hit out of bounds, when ball is broken or buried, or between the tens, etc.

On the umpire blowing his whistle (which he should do loud enough for all to hear) the time-keeper makes allowance for the time lost owing to broken or buried balls, or through accidents.

Besides these things, the umpire looks out generally for " foul " crossing, " riding off," crooking, hitting pony with the head of the stick, etc.

It is not a very satisfactory position to occupy at the best of times, and when one man is attempting it, it is often the reverse ; but this largely depends upon *who* the umpire is, and also upon whether there happens to be in the game a player who is apt to get " heated." In truth, nothing is so annoying to a good player as an inexperienced umpire whose inefficiency frequently affords ample justification for any irritation such a player may show.

Good umpires are very few and far between. Not only must they have everything, to the very slightest details, at their finger ends, keep out of the way of the players, and yet be exactly and immediately just where they are wanted, do a good deal of work in throwing in the balls, etc., but they must also be able to note every turn of the game and, on an appeal or otherwise, make their decisions instantly.

There is *really* too much to do for one man. For instance, he can hardly watch both ends of the game simultaneously to see that the No. 1's are not " fouling " the " backs," nor can he be watching the game if he is off his pony picking up balls, which occasionally he is obliged to do. Moreover, in order to be able to follow the game closely and from the positions best adapted to enable him to give correct decisions, he must of necessity do about as much galloping as though he were actually playing.

When there is only one umpire he rides as much as possible lengthwise of the ground, near the boards, and on whichever side the ball has just previously gone out. He anticipates the direction of the ball so that he can keep clear of the players and be handy if it goes over the boards. Rather than gallop *across* the players towards the centre he should come off the ground. He does as little galloping as possible, consistent with occupying the positions from which he can see the game best. When the players are close to goal, his position would be parallel with the back line and close up to it on one side or the other.

An umpire can but do his best, giving his decisions as promptly and fearlessly as possible and *adhering* to them. Umpiring requires special qualifications. A really fine player will not shine so brilliantly as umpire, unless he has had considerable experience in that capacity, and possesses in addition a cool and level head.

Where there are two umpires, of approximately equal experience and ability, each should—unless a palpable mistake has been made—endorse the decision given by the other. On the other hand, where one is admittedly inferior to the other, he should not be too eager to give decisions himself, but should leave matters as far as possible in the hands of his more capable *confrère*.

When learning to hit, or in fact at any time, to be able to do so when going fast is not the only desideratum. To hit *with direction* is what is required. Do not be afraid to strike *early enough* at the ball. Do not give the pony's mouth a jerk when hitting, or he will very soon become "tricky." Do not use spurs unless absolutely necessary, particularly during the "making"; a tap of the whip should be sufficient at all times. The "Portable Polo Practice Court," invented by Mr. Gordon Withers, of Wembley, Middlesex, must undoubtedly be of great assistance, both to the beginner and to those ambitious to become clever and powerful hitters. Many players have these courts for home practice, and practically every polo-playing regiment in England and Ireland have been supplied with them.

Before concluding, I should like to impress, particularly upon the novice, the importance of helping to make the game as *fast as possible*. Though he may not be able to hit the ball well, he will, by really galloping, and wearing down opponents, by constantly riding them off, etc., help very considerably towards winning. During the whole game he should keep his pony "on its toes,"

so as to be ready to jump off quickly into a gallop. He should not steady up when in the act of striking at the ball, nor if he misses, pull up, or turn on it, but should go right on, and, if backed up, "ride off" the nearest loose opponent. If his men are safely held by their opponents and he is obliged to go back for the ball, he must turn as quickly as possible; but before doing so should take a hasty glance behind, and pull round clear of the other players, or at least in such a manner that he does not risk bringing down any of them, or of being knocked over himself. Any necessary steadying should be done during the placing of the pony whilst going to the ball. A slow, sticky game not only bores any good player in it (though one "galloping man" in it will make a vast difference to the pace in general), and the spectators, but is in fact most uninteresting from every point of view; and sticky play will certainly not win matches. I feel sure a good team which really gallop, ride hard and play hard from start to finish, has an advantage over the side going slower, even though the latter be on handier ponies, or play with somewhat better combination. Not only are the former always getting to the ball first, are not easily caught, or hampered when in possession, but, if actually riding the faster ponies, the pace alone is certain to "tell" on the slower ponies, and indirectly upon their riders, due to the effort necessary to keep their mounts doing their utmost. The galloping team also avoid being ridden off to a great extent, and so somewhat husband their strength, and that of their ponies, for it is much less fatiguing to both to gallop free. I may add, however, a real good team, on handy ponies, can slow up the game somewhat to suit their requirements, by hitting short, passing, and interfering more than ordinarily with their opponents.

A novice should accustom himself when in practice-games to do exactly that which would be the correct thing to do in matches, otherwise the greater pace in the latter will completely muddle him and his ponies. One other thing, he should get himself and his ponies thoroughly fit; ride hard and play hard through the whole match, but particularly towards the end of it; and the probability is he will be the means of winning the match for his side, after it having looked an impossibility to do so—"snatching it from the fire" as it were.

In conclusion, I strongly recommend the player to always ride the best ponies procurable, and it must be borne in mind that they cannot be bought

for nothing. No man can really *play* the game on bad ones. They not only spoil the play and the temper of the rider, but, in addition, constitute a nuisance, and even a danger to every one in the game.

A System of Scoring

ORDER OF ARRIVAL.	NAMES OF PLAYERS.	H'd'c'p (by Goals.)	No. OF TENS. 1	2	3	4	5	6	7	8	9	10
1	Smith	2	1	1	1	1						
2	Brown	0	1	1	1	1						
3	Jones	8	1	1	1	1						
4	Robinson ...	10	1	1	1	1						
5	Thompson ...	3	1	1			1	1				
6	Williams	5	1	1			1	1				
7	Black	2	1	1			1	1				
8	Evans	7	1	1			1	1				
9	Johnson	6			1	1	1	1				
10	Wright	3			1	1	1	1				
11	Boswell	5			1	1	1	1				
12	Buchanan ...	7			1	1	1	1				
13												
14												
15												
16												
17												
18												
19												

PLATE 18.

MANAGING THE GAMES

THE names of the players are put on the marking board in the order of their arrival, dressed ready to play. They also *play* in the same order. When the first eight have played two periods of ten minutes the next go in; if there are not a sufficient number to make the second or any eight, it is made up from the first arrivals, taking them in their proper order, who, after playing six "tens" are not *entitled* to more until all the rest have had an equal number.

A book about eight inches long by six and a half wide will be found handy, sufficiently large to note the amount of play each man has done and make up sides, etc., for about twenty players; the necessary matter can be entered into a *larger* book at end of play if required for record.

Lines may be ruled (see Plate 18) on the left-hand page, and the one facing it left blank for making up the sides on. The column marked "Handicap" is useful until the form of each player is known, as from it the game manager can see at a glance the ability of each man. The handicap is made by putting the *best* player at a certain number of goals and valuing the others from him; if altered from time to time as changes are observed in individual play, it constitutes a valuable accessory in the making up of "handicaps," especially where a number of visitors play each season.

A stroke is marked opposite each player's name in the column of the ten minutes played by him. This form of scoring shows instantly the number of tens played by each man. Each player should give the game manager ten minutes' notice of his intention to discontinue playing. A mark can then be put through his name; otherwise, should he be down for the ten about to commence, and only then acquaints the manager of the fact, he causes considerable trouble to him—as he may be obliged to entirely rearrange the sides—and annoyance to the players by keeping them waiting.

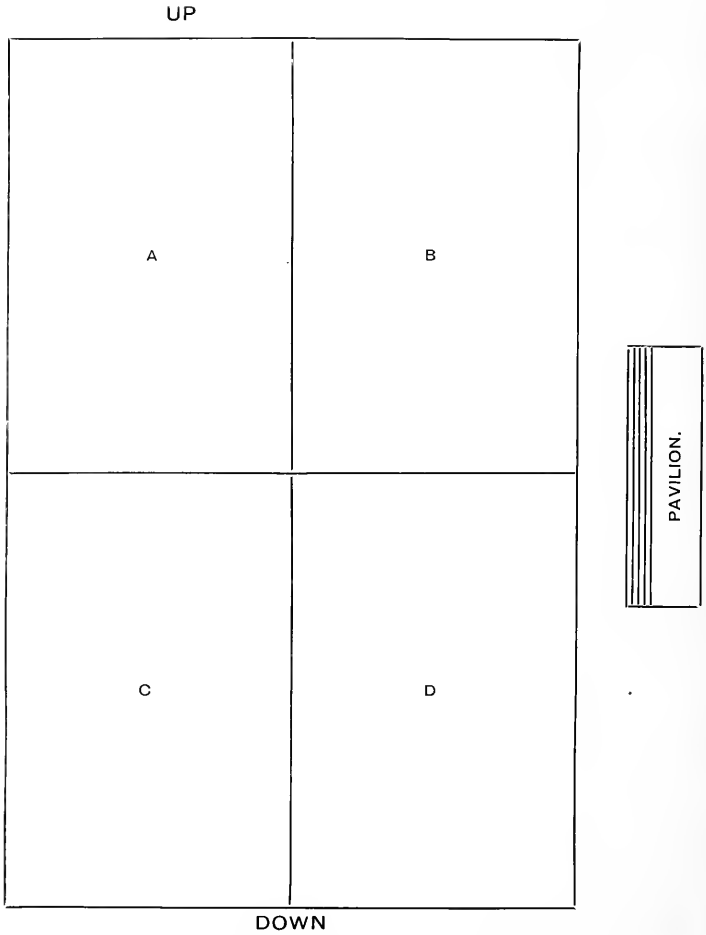

Plate 19.—A Plan of a Polo Ground, showing Positions taken by the Two Umpires.

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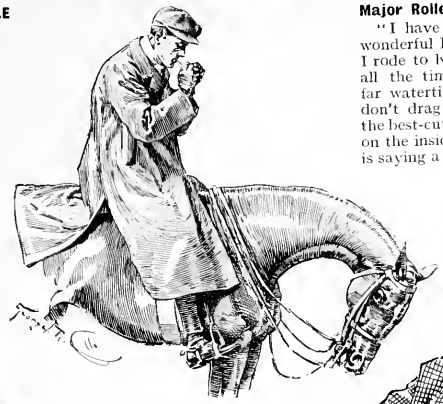

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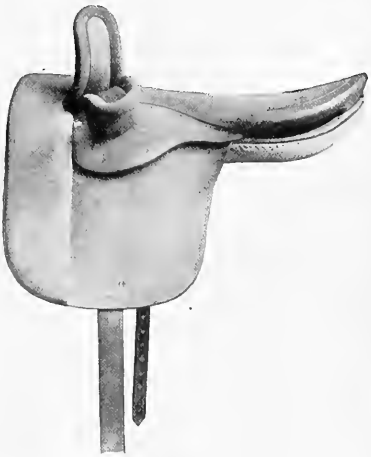

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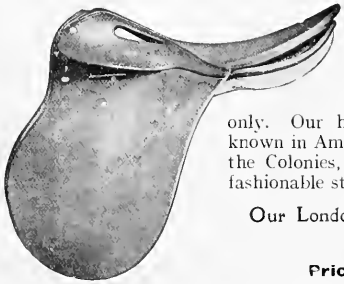

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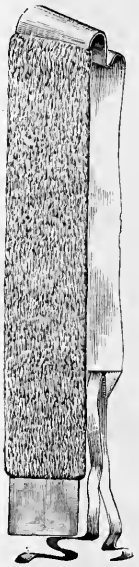

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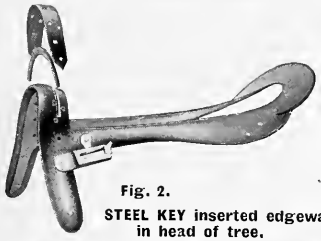

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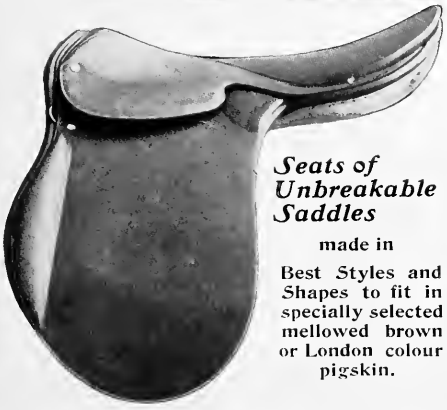

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